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U. S. DEPARTMENT OF THE INTERIOR

PROTOTYPE OIL SHALE LEASING PROGRAM

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OIL SHALE TRACT C-b

DEVELOPMENT MONITORING REPORT #2

(October 1978 through April 1979)

Submitted to:

Mr. Peter A. Rutledge
Area Oil Shale Supervisor
Conservation District
U. S. Geological Survey
Grand Junction, Colorado

By:

C-b SHALE OIL PROJECT

OCCIDENTAL OIL SHALE, INC., LESSEE

JULY 15, 1979

INTRODUCTION

Regular environmental reporting for Oil Shale Tract C-b in the current phase called Development Monitoring consists of the following reports:

REPORT	SUBMITTAL DATE
Six-Month Data Reports	January 15 July 15
Annual Report	April

Development Monitoring was initiated in April, 1978. Development Monitoring (Data) Report #1 was submitted on January 15, 1979 containing data from April 1978 through September 1978. This present report is called Development Monitoring Report #2 and contains data from October 1978 through April 1979.

The first annual report, the 1978 C-b Annual Report, (April 1979) consisted of the following four volumes:

Vol 1	Summary of Development Activities, Costs and Environmental Monitoring
Vol 2	Environmental Analysis
Vol 3	Volume 2 Supporting Data
Vol 4	Volume 2 Time Series Plots

The time series plots are to be updated in a supplement to Development Monitoring Report #2, expected to follow this report in approximately one month.

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C. Station Coordinates

PRE-EXPLORATION ENVIRONMENTAL RECON

I PRE-EXPLORATION ENVIRONMENTAL RECONNAISSANCE SURVEYS

No environmental reconnaissance surveys have been conducted during the development period. The results of previous surveys are contained in Quarterly Data Reports #1 & #2 and are summarized in Summary Reports #1 & #2.

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DEVELOPMENT MONITORING PROGRAMS

HYDROLOGY &
WATER QUALITY

II A HYDROLOGY AND WATER QUALITY

Hydrologic and water quality monitoring frequency and laboratory analysis requirements vary by type and location of sample collection station. The requirements also vary between government agencies and purposes of monitoring. Tract C-b monitoring requirements have been detailed in these documents as follows:

DMP -	Development Monitoring Plan prepared for the Area Oil Shale Supervisor's Office (AOSSO).
WAP -	Water Augmentation Plan prepared for the State of Colorado Water Court, Division 5.
NPDES -	National Pollutant Discharge Elimination System prepared for the State of Colorado Water Quality Control Division.

Data presented in this data report and in previous reports have been collected under the DMP requirements. Future data reports will be extended to include additional requirements of the WAP and NPDES. Exhibits A and B of the WAP, presented in jacket Figures II A-1 and II A-2 provide a complete list and location of the WAP sampling sites. Station coordinates and four-digit computer codes for currect collection stations are presented in Section IV, Data Automation.

A summary of current and future water sampling frequency requirements by parameter and station type is presented in Table II A-1. Footnotes are used to identify station and special requirements.

Table II A-1a

WATER SAMPLING FREQUENCY REQUIREMENTS
MAJOR USGS GAUGING STATIONS*

PARAMETERS	SYMBOL	DAILY	WEEKLY	MONTHLY	QUARTERLY	SEMI-ANNUALLY	ANNUALLY
Alkalinity	$CaCO_3$			●			
MO Alkalinity	MA						
P Alkalinity	PA						
Aluminum	Al				●		
Ammonia	as NH_3			●			
Antimony							
Arsenic	As			●			
Bacteria	SB						
Barium	Ba				●		
Beryllium	Be						
Bicarbonate	HCO_3			●			
Biological Oxygen Demand	BOD				●		
Bismuth	Bi						
Boron	B			●			
Bromine	Br				●		
Cadmium	Cd				●		
Calcium	Ca			●			
Carbonate	CO_3			●			
Chemical Oxygen Demand	COD				●		
Chloride	Cl			●			
Chromium	Cr				●		
Cobalt	Co						
Coliform, Fecal					●		
Coliform, Total					●		
Color (Not Precise)							
Cond. Hydrocarbon	CH						
Conductivity, Specific	SPC	●					
Copper	Cu				●		
Cyanide	Cn				●		
Dissolved Oxygen	DO						
Element Scan					●		
Fecal Streptococcus					●		
Flow		●					
Fluoride	F			●			
Gallium	Ga						
Germanium	Ge						
Hardness (Ca, Mg)							
Hydroxides	OH						
Iodine	I						
Iron	Fe			●			
Kjeldahl Nitrogen				●			
Lead	Pb				●		
Level							
Lithium	Li				●		
Magnesium	Mg			●			
Manganese	Mn			●			
Mercury	Hg				●		
Methylene Blue Active Substance	MBAS					●	
Molybdenum	Mo				●		
Nickel	Ni						
Nitrate	NO_3			●			
Nitrite	NO_2			●			
Odor							
Oil & Grease	OLGR				●		
Organic Carbon, Dissolved	DOC			●			
Organic Carbon, Total	TOC			●			
Ortho-Phosphorus (Phosphate)	PO_4				●		
Pesticides						●	
pH	pH	●					
Phenols				●			
PNA	PNA						
Potassium	K			●			
Rubidium	Rb						
Sediment Characterization							
Selenium	Se				●		
Scandium	SC						
Silica	SiO_2			●			
Silver	Ag						
Sodium	Na			●			
Solids, Dissolved	TDS			●			
Solids, Suspended	SOLS			●			
Strontium	Sr				●		
Surfactants							
Sulfate	SO_4			●			
Sulfide	SO_2				●		
Temperature (°C)		●					
Thiosulfite	S_2O_3						
Tin	Sn						
Titanium	Ti						
Tungsten	W						
Turbidity		▶					
Vanadium	V						
Yttrium	Y						
Zinc	Zn				●		
Zirconium	Zr						
Radioactivity							
Gross Alpha (pci)					●		
Radium 226	Ra226						
Natural Uranium	U						
Gross Beta					●		
Cesium	Ce137						
Sr90							
Thorium 230	TH230						
Uranium	U						
Fractionation of Organic Carbon into							
a. Hydrophobic Bases						●	
b. Hydrophobic Acids						●	
c. Hydrophobic Neutrals						●	
d. Hydrophilic Bases						●	
e. Hydrophilic Acids						●	
f. Hydrophilic Neutrals						●	

* DMP and WAP stations WU07, WU22, WU58, WU61.

SYMBOLS

● Applies to all stations (DMP and WAP).

▶ Applies to stations WU07 and WU61 only.

Table II A-1b

WATER SAMPLING FREQUENCY REQUIREMENTS
MINOR USGS GAUGING STATIONS*

PARAMETERS	SYMBOL	DAILY	WEEKLY	MONTHLY	QUARTERLY	SEMI-ANNUALLY	ANNUALLY	
Alkalinity	$CaCO_3$				●			
MO Alkalinity	MA							
P Alkalinity	PA							
Aluminum	Al				●			
Ammonia	as NH_3				●			
Antimony								
Arsenic	As				●			
Bacteria	SB							
Barium	Ba				●			
Beryllium	Be				●			
Bicarbonate	HCO_3							
Biological Oxygen Demand	BOD				●			
Bismuth	Bi							
Boron	B				●			
Bromine	Br				●			
Cadmium	Cd				●			
Calcium	Ca				●			
Carbonate	CO_3				●			
Chemical Oxygen Demand	COD				●			
Chloride	Cl				●			
Chromium	Cr				●			
Cobalt	Co							
Coliform, Fecal					●			
Coliform, Total					●			
Color (Not Precise)								
Conc. Hydrocarbon	CH							
Conductivity, Specific	SPC							
Copper	Cu				●			
Cyanide	Cn				●			
Dissolved Oxygen	DO							
Element Scan					●			
Fecal Streptococcus					●			
Flow					●			
Fluoride	F				●			
Gallium	Ga							
Germanium	Ge							
Hardness (Ca, Mg)								
Hydroxides	OH							
Iodine	I							
Iron	Fe				●			
Kjeldahl Nitrogen					●			
Lead	Pb				●			
Level								
Lithium	Li				●			
Magnesium	Mg				●			
Manganese	Mn				●			
Mercury	Hg				●			
Methylene Blue Active Substance	MBAS							
Molybdenum	Mo				●			
Nickel	Ni							
Nitrate	NO_3				●			
Nitrite	NO_2				●			
Odor								
Oil & Grease	OLGR				●			
Organic Carbon, Dissolved	DOC				●			
Organic Carbon, Total	TOC				●			
Ortho-Phosphorus (Phosphate)	PO_4				●			
Pesticides								
pH	pH				●			
Phenols					●			
PNA	PNA							
Potassium	K				●			
Rubidium	RB							
Sediment Characterization							▶	
Selenium	Se				●			
Scandium	SC							
Silica	SiO_2				●			
Silver	Ag							
Sodium	Na				●			
Solids, Dissolved	TDS				●			
Solids, Suspended	SOLS				●			
Strontium	Sr				●			
Surfactants								
Sulfate	SO_4				●			
Sulfide	SO_2				●			
Temperature (°C)					●			
Thiosulfite	S_2O_3							
Tin	Sn							
Titanium	Ti							
Tungsten	W							
Turbidity								
Vanadium	V							
Yttrium	Y							
Zinc	Zn				●			
Zirconium	Zr							
Radioactivity								
Gross Alpha (pci)					●			
Radium 226	Ra226							
Natural Uranium	U							
Gross Beta					●			
Cesium	Ce137							
Sr90								
Thorium 230	TH230							
Uranium	U							
Fractionation of Organic Carbon into								
a. Hydrophobic Bases								
b. Hydrophobic Acids								
c. Hydrophobic Neutrals								
d. Hydrophilic Bases								
e. Hydrophilic Acids								
f. Hydrophilic Neutrals								

* DMP stations WU15, WU25, WU28, WU33, WU36, WU39, WU42, WU50, WU52. WAP stations are all DMP stations + stations 4800, 6200, 6222, 6225.

SYMBOLS

● Applies to all stations (DMP and WAP).
▶ Applies to station WU42 only.

Table II A-1c

WATER SAMPLING FREQUENCY REQUIREMENTS
SPRINGS AND SEEPS STATIONS*

PARAMETERS	SYMBOL	DAILY	WEEKLY	MONTHLY	QUARTERLY	SEMI-ANNUALLY	ANNUALLY
Alkalinity	$CaCO_3$				●		
MO Alkalinity	MA						
P Alkalinity	PA						
Aluminum	Al				●		
Ammonia	as NH_3				●		
Antimony					●		
Arsenic	As				●		
Bacteria	SB						
Barium	Ba				●		
Beryllium	Be						
Bicarbonate	HCO_3				●		
Biological Oxygen Demand	BOD				●		
Bismuth	Bi						
Boron	B				●		
Bromine	Br						●
Cadmium	Cd				●		
Calcium	Ca				●		
Carbonate	CO_3				●		
Chemical Oxygen Demand	COD				●		
Chloride	Cl				●		
Chromium	Cr				●		
Cobalt	Co						
Coliform, Fecal						●	
Coliform, Total							
Color (Not Precise)							
Cond. Hydrocarbon	CH						
Conductivity, Specific	SPC			●			
Copper	Cu				●		
Cyanide	Cn						
Dissolved Oxygen	DO			●			
Element Scan							
Fecal Streptococcus						●	
Flow			■				
Fluoride	F				●		
Gallium	Ga						
Germanium	Ge						
Hardness (Ca, Mg)							
Hydroxides	OH						
Iodine	I						
Iron	Fe				●		
Kjeldahl Nitrogen					●		
Lead	Pb				●		
Level							
Lithium	Li				●		
Magnesium	Mg				●		
Manganese	Mn				●		
Mercury	Hg				●		
Methylene Blue Active Substance	MBAS						
Molybdenum	Mo						
Nickel	Ni						
Nitrate	NO_3				●		
Nitrite	NO_2				●		
Odor							
Oil & Grease	OLGR				●		
Organic Carbon, Dissolved	DOC					▶	
Organic Carbon, Total	TOC						
Ortho-Phosphorus (Phosphate)	PO_4						
Pesticides							
pH	pH			●			
Phenols					●		
PNA	PNA						
Potassium	K				●		
Rubidium	RB						
Sediment Characterization							
Selenium	Se				●		
Scandium	SC						
Silica	SiO_2						
Silver	Ag						
Sodium	Na				●		
Solids, Dissolved	TDS						
Solids, Suspended	SOLS				●		
Strontium	Sr				●		
Surfactants							
Sulfate	SO_4				●		
Sulfide	SO_2						
Temperature (°C)				●			
Thiosulfite	S_2O_3						
Tin	Sn						
Titanium	Ti						
Tungsten	W						
Turbidity							
Vanadium	V						
Yttrium	Y						
Zinc	Zn				●		
Zirconium	Zr						
Radioactivity							
Gross Alpha (pci)						●	
Radium 226	Ra226						
Natural Uranium	U						
Gross Beta						●	
Cesium	Ce137						
Sr90							
Thorium 230	TH230						
Uranium	U						
Fractionation of Organic Carbon into							
a. Hydrophobic Bases							
b. Hydrophobic Acids							
c. Hydrophobic Neutrals							
d. Hydrophilic Bases							
e. Hydrophilic Acids							
f. Hydrophilic Neutrals							

* DMP and WAP stations WS01, WS02, WS03, WS04, WS06, WS07, WS09, WS10. Additional WAP stations CER-1, B-3, H-3, F-3, Fig. 4-A, W-4, W-9, CER-7, S-9, P3 & 3A.

SYMBOLS

● Applies to all DMP stations.
▶ Applies to two stations to be selected by AOSSO.
■ Applies to DMP and WAP stations.

Table II A-1d

WATER SAMPLING FREQUENCY REQUIREMENTS
ALLUVIAL WELLS STATIONS*

PARAMETERS	SYMBOL	DAILY	WEEKLY	MONTHLY	QUARTERLY	SEMI-ANNUALLY	ANNUALLY	
Alkalinity	$CaCO_3$				●			
MO Alkalinity	MA							
P Alkalinity	PA							
Aluminum	Al				●			
Ammonia	as NH_3				●			
Antimony								
Arsenic	As				●			
Bacteria	SB							
Barium	Ba				●			
Beryllium	Be							
Bicarbonate	HCO_3				●			
Biological Oxygen Demand	BOD					●		
Bismuth	Bi							
Boron	B				●			
Bromine	Br						●	
Cadmium	Cd				●			
Calcium	Ca				●			
Carbonate	CO_3				●			
Chemical Oxygen Demand	COD				●			
Chloride	Cl				●			
Chromium	Cr				●			
Cobalt	Co							
Coliform, Fecal						●		
Coliform, Total						●		
Color (Not Precise)								
Cond. Hydrocarbon	CH							
Conductivity, Specific	SPC			●				
Copper	Cu				●			
Cyanide	Cn							
Dissolved Oxygen	DO			●				
Element Scan								
Fecal Streptococcus								
Flow								
Fluoride	F				●			
Gallium	Ga							
Germanium	Ge							
Hardness (Ca, Mg)					●			
Hydroxides	OH							
Iodine	I							
Iron	Fe				●			
Kjeldahl Nitrogen					●			
Lead	Pb				●			
Level				●				
Lithium	Li				●			
Magnesium	Mg				●			
Manganese	Mn				●			
Mercury	Hg				●			
Methylene Blue Active Substance	MBAS						●	
Molybdenum	Mo				●			
Nickel	Ni				●			
Nitrate	NO_3				●			
Nitrite	NO_2							
Odor								
Oil & Grease	OLGR				●			
Organic Carbon, Dissolved	DOC							
Organic Carbon, Total	TOC							
Ortho-Phosphorus (Phosphate)	PO_4							
Pesticides								
pH	pH			●				
Phenols					●			
PNA	PNA							
Potassium	K				●			
Rubidium	RB							
Sediment Characterization								
Selenium	Se				●			
Scandium	SC							
Silica	SiO_2							
Silver	Ag				●			
Sodium	Na				●			
Solids, Dissolved	TDS				●			
Solids, Suspended	SOLS							
Strontium	Sr				●			
Surfactants								
Sulfate	SO_4				●			
Sulfide	SO_2							
Temperature (°C)				●				
Thiosulfite	S_2O_3							
Tin	Sn							
Titanium	Ti							
Tungsten	W							
Turbidity								
Vanadium	V							
Yttrium	Y							
Zinc	Zn				●			
Zirconium	Zr							
Radioactivity								
Gross Alpha (pci)						●		
Radium 226	Ra226							
Natural Uranium	U							
Gross Beta						●		
Cesium	Ce137							
Sr90								
Thorium 230	TH230							
Uranium	U							
Fractionation of Organic Carbon into								
a. Hydrophobic Bases						●		
b. Hydrophobic Acids						●		
c. Hydrophobic Neutrals						●		
d. Hydrophilic Bases						●		
e. Hydrophilic Acids						●		
f. Hydrophilic Neutrals						●		

* DMP and WAP stations: WA01, WA02, WA03, WA04, WA05, WA06, WA07, WA08, WA09, WA10, WA11, WA12, WA13.
Current status of wells (July 1979), WA02 and WA07 are plugged. WA04 and WA13 are dry. All others are being sampled.

SYMBOLS

● Applies to all stations (DMP and WAP).

Table II A-1e
WATER SAMPLING FREQUENCY REQUIREMENTS
DEEP WELLS - UPPER AQUIFER*

PARAMETERS	SYMBOL	DAILY	WEEKLY	MONTHLY	QUARTERLY	SEMI-ANNUALLY	ANNUALLY
Alkalinity	$CaCO_3$					●	
MC Alkalinity	MA						
P Alkalinity	PA						
Aluminum	Al						
Ammonia	as NH_3					●	
Antimony						●	
Arsenic	As						
Bacteria	SB					●	
Barium	Ba						
Beryllium	Be					●	
Bicarbonate	HCO_3						
Biological Oxygen Demand	BOD					●	
Bismuth	Bi					●	
Boron	B						
Bromine	Br					●	
Cadmium	Cd					●	
Calcium	Ca						
Carbonate	CO_3					●	
Chemical Oxygen Demand	COD					●	
Chloride	Cl					●	
Chromium	Cr					●	
Cobalt	Co					●	
Coliform, Fecal						●	
Coliform, Total							
Color (Not Precise)							
Conc. Hydrocarbon	CH						
Conductivity, Specific	SFC						
Copper	Cu					●	
Cyanide	Cn						
Dissolved Oxygen	DO						
Element Scan							
Fecal Streptococcus							
Flow							
Fluoride	F					●	
Gallium	Ga						
Germanium	Ge						
Hardness (Ca, Mg)						●	
Hydroxides	OH						
Iodine	I						
Iron	Fe					●	
Kjeldahl Nitrogen						●	
Lead	Pb					●	
Level				■			
Lithium	Li					●	
Magnesium	Mg					●	
Manganese	Mn					●	
Mercury	Hg					●	
Methylene Blue Active Substance	MBAS						
Molybdenum	Mo					●	
Nickel	Ni					●	
Nitrate	NO_3					●	
Nitrite	NO_2						
Odor							
Oil & Grease	ULGR					●	
Organic Carbon, Dissolved	DOC					●	
Organic Carbon, Total	TOC						
Ortho-Phosphorus (Phosphate)	PO_4						
Pesticides							
pH	pH						
Phenols						●	
PNA	PNA						▶
Potassium	K					●	
Rubidium	Rb						
Sediment Characterization							
Selenium	Se					●	
Scandium	SC						
Silica	SiO_2						
Silver	Ag					●	
Sodium	Na					●	
Solids, Dissolved	TDS					●	
Solids, Suspended	SOLS						
Strontium	Sr					●	
Surfactants							
Sulfate	SO_4					●	
Sulfide	SO_2						
Temperature (°C)							
Thiosulfite	S_2O_3						
Tin	Sn						
Titanium	Ti						
Tungsten	W						
Turbidity							
Vanadium	V						
Yttrium	Y						
Zinc	Zn					●	
Zirconium	Zr						
Radioactivity							
Gross Alpha (pCi)						●	
Radium 226	Ra226						
Natural Uranium	U						
Gross Beta						●	
Cesium	Ce137						
Sr90							
Thorium 230	TH230						
Uranium	U						
Fractionation of Organic Carbon into							
a. Hydrophobic Bases							
b. Hydrophobic Acids							
c. Hydrophobic Neutrals							
d. Hydrophilic Bases							
e. Hydrophilic Acids							
f. Hydrophilic Neutrals							

* C-b affiliated (DMP and WAP stations)

WX02	WX10	WX18	WX32	WX55
WX03	WX12	WX19	WX33	WX63
WX04	WX17	WX20	WX44	WX92
		WX21		

Non-affiliated (Additional WAP stations)

TH75-5A	TH75-9A	Greeno 4-4	Bute 25
TH75-13A	CER RB-D-02	Oldland 3	Liberty Bell 12
TH75-18A	TH75-15A	GP-17X-BG	Union B1

SYMBOLS
- ● Applies to all C-b affiliated stations
- ▶ Applies to stations and species to be identified.
- ■ Applies to both affiliated and non-affiliated stations

Table II A-1f
WATER SAMPLING FREQUENCY REQUIREMENTS
DEEP WELLS - LOWER AQUIFER*

PARAMETERS	SYMBOL	DAILY	WEEKLY	MONTHLY	QUARTERLY	SEMI-ANNUALLY	ANNUALLY
Alkalinity	$CaCO_3$					●	
MO Alkalinity	MA						
P Alkalinity	PA						
Aluminum	Al					●	
Ammonia	as NH_3					●	
Antimony							
Arsenic	As					●	
Bacteria	SB						
Barium	Ba					●	
Beryllium	Be						
Bicarbonate	HCO_3					●	
Biological Oxygen Demand	BOD					●	
Bismuth	Bi						
Boron	B					●	
Bromine	Br					●	
Cadmium	Cd						
Calcium	Ca					●	
Carbonate	CO_3					●	
Chemical Oxygen Demand	COD					●	
Chloride	Cl					●	
Chromium	Cr					●	
Cobalt	Co					●	
Coliform, Fecal							
Coliform, Total							
Color (Not Precise)							
Cond. Hydrocarbon	CH						
Conductivity, Specific	SPC						
Copper	Cu					●	
Cyanide	Cn						
Dissolved Oxygen	DO						
Element Scan							
Fecal Streptococcus							
Flow							
Fluoride	F					●	
Gallium	Ga						
Germanium	Ge						
Hardness (Ca, Mg)						●	
Hydroxides	OH						
Iodine	I						
Iron	Fe					●	
Kjeldahl Nitrogen						●	
Lead	Pb					●	
Level				■			
Lithium	Li					●	
Magnesium	Mg					●	
Manganese	Mn					●	
Mercury	Hg					●	
Methylene Blue Active Substance	MBAS						
Molybdenum	Mo					●	
Nickel	Ni					●	
Nitrate	NO_3					●	
Nitrite	NO_2						
Odor							
Oil & Grease	OLGR					●	
Organic Carbon, Dissolved	DOC					●	
Organic Carbon, Total	TOC						
Ortho-Phosphorus (Phosphate)	PO_4						
Pesticides							
pH	pH						
Phenols						●	
PNA	PNA						▶
Potassium	K					●	
Rubidium	RB						
Sediment Characterization							
Selenium	Se					●	
Scandium	SC						
Silica	SiO_2						
Silver	Ag					●	
Sodium	Na					●	
Solids, Dissolved	TDS					●	
Solids, Suspended	SOLS						
Strontium	Sr					●	
Surfactants							
Sulfate	SO_4					●	
Sulfide	SO_2						
Temperature (°C)							
Thiosulfite	S_2O_3						
Tin	Sn						
Titanium	Ti						
Tungsten	W						
Turbidity							
Vanadium	V						
Yttrium	Y						
Zinc	Zn					●	
Zirconium	Zr						
Radioactivity							
Gross Alpha (pcl)						●	
Radium 226	Ra226						
Natural Uranium	U						
Gross Beta						●	
Cesium	Ce137						
Sr90							
Thorium 230	TH230						
Uranium	U						
Fractionation of Organic Carbon into							
a. Hydrophobic Bases							
b. Hydrophobic Acids							
c. Hydrophobic Neutrals							
d. Hydrophilic Bases							
e. Hydrophilic Acids							
f. Hydrophilic Neutrals							

* C-b affiliated (DMP and WAP stations)

WY01
WY10
WY12
WY17
WY45
WY46
WY52
WY54
WY61
WY62
WY81
WY91

Non-affiliated (Additional WAP stations)

TH75-5B
TH75-13B
Equity 1
TH75-18B
TH75-10B
TH75-9B
Equity Sulfur 1A
CER RB-D-03
TH75-15B
Greeno 4-4
TG71-3
TG71-5
Oldland 3
GP-17X-BG
Bute 25
Liberty Bell 12
Getty 9-4D
TG71-4
Equity BS 13

SYMBOLS

- ● Applies to all C-b affiliated stations
- ▶ Applies to stations and species to be identified
- ■ Applies to both C-b affiliated and non-affiliated stations

WATER SAMPLING FREQUENCY REQUIREMENTS
NPDES DISCHARGE POINT*

PARAMETERS	SYMBOL	DAILY	WEEKLY	MONTHLY	QUARTERLY	SEMI-ANNUALLY	ANNUALLY
Alkalinity	$CaCO_3$					●	
M Alkalinity	MA						
P Alkalinity	PA						
Aluminum	Al		●			▲	
Ammonia	as NH_3		●				
Antimony							
Arsenic	As					▲	
Bacteria	SB						
Barium	Ba					▲	
Beryllium	Be					▲	
Bicarbonate	HCO_3					●	
Biological Oxygen Demand	BOD						
Bismuth	Bi					▲	
Boron	B		●			●	
Bromine	Br					●	
Cadmium	Cd					▲	
Calcium	Ca			●		●	
Carbonate	CO_3						
Chemical Oxygen Demand	COD					●	
Chloride	Cl	●				●	
Chromium	Cr					▲	
Cobalt	Co					▲	
Coliform, Fecal							
Coliform, Total							
Color (Not Precise)							
Cond. Hydrocarbon	CH					●	
Conductivity, Specific	SPC						
Copper	Cu			●		▲	
Cyanide	Cn						
Dissolved Oxygen	DO					●	
Element Scan							
Fecal Streptococcus							
Flow		■					
Fluoride	F		●			●	
Gallium	Ga					▲	
Germanium	Ge					▲	
Hardness (Ca, Mg)							
Hydroxides	OH						
Iodine	I						
Iron	Fe		●			▲	
Kjeldahl Nitrogen						▲	
Lead	Pb					▲	
Level							
Lithium	Li					▲	
Magnesium	Mg					●	
Manganese	Mn					▲	
Mercury	Hg			●		▲	
Methylene Blue Active Substance	MBAS						
Molybdenum	Mo					▲	
Nickel	Ni					▲	
Nitrate	NO_3					●	
Nitrite	NO_2					●	
Odor						●	
Oil & Grease	OLGR	▶	●			●	
Organic Carbon, Dissolved	DOC					●	
Organic Carbon, Total	TOC						
Ortho-Phosphorus (Phosphate)	PO_4						
Pesticides							
pH	ph	●					
Phenols			●			●	
PNA	PNA						
Potassium	K					▲	
Rubidium	RB						
Sediment Characterization							
Selenium	Se					▲	
Scandium	SC						
Silica	SiO_2					●	
Silver	Ag			●			
Sodium	Na					▲	
Solids, Dissolved	TDS		●			▲	
Solids, Suspended	SOLS		●				
Strontium	Sr					▲	
Surfactants							
Sulfate	SO_4					●	
Sulfide	SO_2					●	
Temperature (°C)							
Thiosulfite	S_2O_3						
Tin	Sn						
Titanium	Ti					▲	
Tungsten	W						
Turbidity							
Vanadium	V					▲	
Yttrium	Y						
Zinc	Zn			●		▲	
Zirconium	Zr					▲	
Radioactivity							
Gross Alpha (pci)						●	
Radium 226	Ra226					▼	
Natural Uranium	U					▼	
Gross Beta						●	
Cesium	Ce137					▼	
Sr90						▼	
Thorium 230	TH230						
Uranium	U						
Fractionation of Organic Carbon into							
a. Hydrophobic Bases						●	
b. Hydrophobic Acids						●	
c. Hydrophobic Neutrals						●	
d. Hydrophilic Bases						●	
e. Hydrophilic Acids						●	
f. Hydrophilic Neutrals						●	

* NPDES discharge points:

001 S12T3S R97W
~600'S and 2100'E of section corner 1, 2, 11, 12

002 S12T3S R97W
~2100 'N and 3240'E of section corner 1, 2, 11, 12

003 S12T3S R97W
~2700'N and 4500'E of section corner 1, 2, 11, 12

SYMBOLS

- ● Applies to all NPDES discharge points
- ■ Daily flow also at USGS station WU61
- ▲ Total values
- ▼ Required if gross alpha or gross beta increases by 20% above average.
- ▶ Visual analysis of presence of oil and grease only.

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- 09306039 II A-107
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- 09306175 II A-111
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- 09306222 II A-123
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SPRINGS AND SEEPS II A-203

GROUND WATER II A-211
- GROUND WATER LEVELS II A-213
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* Data for minor water gauging stations 09306015 (WU15), 09306025 (WU25), 09306028 (WU28), 09306033 (WU33), 09306050 (WU50), and 09306052 (WU52) were reported in the last data report. No updates to these data have been received for this report.

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OBSERVATION WELLS

Designation	Owner of Well	Data Measured			Measurements By
		Piezometric Levels		Water Quality	
		Upper Aquifer	Lower Aquifer		
Cb-1	Cb	–	m	p	A
Cb-2	Cb	m	–	p	A
Cb-3	Cb	m *	m *	p	A
Cb-4	Cb	m	–	p	A
SG-1	Cb	c	c	p	A
SG-1A	Cb	m	–	p	A
SG-6	Cb	m	m	p	A
SG-8	Cb	m	–	p	A
SG-8R	Cb	–	m	p	A
SG-9	Cb	c	c	p	A
SG-10	Cb	–	m	p	A
SG-10A	Cb	m	–	p	A
SG-10R	Cb	–	m	p	A
SG-11	Cb	m	m	p	A
SG-17	Cb	c	c	p	A
SG-18A	Cb	m	–	p	A
SG-19	Cb	c	–	p	A
SG-20	TOSCO	m	–	p	A
SG-21	Cb	m	–	p	A
AT-1C	Cb	m	m	p	A
A-1	+	c	–	p	A
A-2	+	m	–	p	A
A-3	Cb	c	–	p	A
A-4	Cb	m	–	p	A
A-5	Cb	c	–	p	A
A-6	+	m	–	p	A
A-7	Cb	c	–	p	A
A-8	+	c	–	p	A
A-9	Cb	m	–	p	A
A-10	Cb	m	–	p	A
A-11	Cb	c	–	p	A
A-12	Cb	m	–	p	A
A-13	Cb	m	–	p	A
TH75-5A & 5B	U.S.	m (5A)	m (5B)	–	A/F
TH75-13A&13B	U.S.	m (13A)	m (13B)	–	A/F
Equity 1	Equity Oil Co	–	m	–	A/F
TH75-18A&18B	U.S.	m (18A)	m (18B)	–	A/F
TH 75-10B	U.S.	–	m	–	A/F
TH75-9A & 9B	U.S.	m (9A)	m (9B)	–	A/F
Equity Sulfur 1A	Equity Oil Co.	–	m	–	A/F
CER RB-D-02&03	U.S.	m (02)	m (03)	–	A/F
TH75-15A &15B	U.S.	m (15A)	m (15B)	–	A/F
Greeno 4-4	Shell Oil Co.	m *	m *	–	A/F
TG71-3	TOSCO	–	m	–	A/F
TG71-5	TOSCO	–	m	–	A/F
Oldland 3	TOSCO	m *	m *	–	A/F
GP-17X-8G	U.S.	m *	m *	–	A/F
Bute 25	TOSCO	m *	m *	–	A/F
Liberty Bell 12	TOSCO	m *	m *	–	A/F
Union 8-1	Union Oil Co.	m	–	–	A
Getty 9-4D	Getty Oil Co.	–	m	–	A/F
Colony 12-596	Atlantic Richfield	c	–	–	A/Colony
TG71-4	TOSCO	–	m	–	A/F
Equity BS-13	Equity Oil Co.	–	m	–	A/F

An asterisk (*) following frequency symbols in columns under "Piezometric Levels" indicates that the composite piezometric level is monitored

Frequency of measurement of water levels in alluvial wells indicated under "Upper Aquifer."

+ Regardless of ownership, Applicant has the right to monitor these wells.

PRECIPITATION

Designation	Name of Station	Measurements	
		Frequency	By
020	Cb Air quality trailer 020	c	A
023	Cb Air quality trailer 023	c	A
LH	Little Hills	c	F
M	Meeker 2	c	F
SG	Scandard Gulch on Roan Plateau	c	F
CG	Corral Gulch	c	F
JQS	JQS Gage	c	F
EFPC	East Fork Parachute Creek	c	F
EMFPC	East Middle Fork Parachute Creek	c	F

STREAM FLOW

(Prefix 0930 omitted from Station No.)

Station No.	Description	Data Measured		Measurements By
		Discharge	Quality	
4800	White River below Meeker	c	p	F
6007	Piceance Creek below Rio Blanco	c	p	F
6015	Middle Fork Stewart Gulch	c	p	F
6022	Stewart Gulch above West Fork	c	p	F
6025	West Fork Stewart Gulch, upstream	c	p	F
6028	West Fork Stewart Gulch at mouth	c	p	F
6033	Sorghum Gulch, upstream	c	p	F
6036	Sorghum Gulch at mouth	c	p	F
6039	Cottonwood Gulch	c	p	F
6042	Tributary of Piceance Cr. (No Name Gulch)	c	p	F
6050	Scandard Gulch, upstream	c	p	F
6052	Scandard Gulch at mouth	c	p	F
6058	Willow Creek	c	p	F
6061	Piceance Creek above Hunter Creek	c	p	F
6200	Piceance Creek below Ryan Gulch	c	p	F
6222	Piceance Creek at White River	c	p	F
6255	Yellow Creek near White River	c	p	F

SPRINGS OR SEEPS

Designation	Data Measured		Measurements By
	Discharge	Quality	
Cb S-1	w	p	S/A
Cb S-2	–	p	A
Cb S-3	w	p	S/A
Cb S-4	–	p	A
Cb S-6	w	p	S/A
Cb S-7	–	p	A
Cb S-8	w	p	A
Cb S-9	w	p	A
Cb S-10 (W-3)	w	p	S/A
CER-1	w	–	S
B-3	w	–	S
H-3	w	–	S
F-3	w	–	S
Fig.4-A	w	–	S
W-4	w	–	S
W-9	w	–	S
CER-7	w	–	S
S-9	w	–	S
P 3 & 3A	w	–	S

GENERAL NOTES

1 See Exhibit A for location of monitoring stations listed on this Exhibit.

2. Letter symbols under columns of "Data Measured" indicate normal frequency of measurements as follows.

c - continuous recorder (or daily total or mean)	s - semiannually
w - weekly	a - annually
m - monthly	p - periodic or variable depending on water quality parameters measured
q - quarterly	

3 Letter symbols under column of "Measurements By" have following meanings:

A - Applicants in Case No. W-3492
F - Federal (USGS)
S - State of Colorado (Div of Water Resources)
O - Others (Indicated where known)

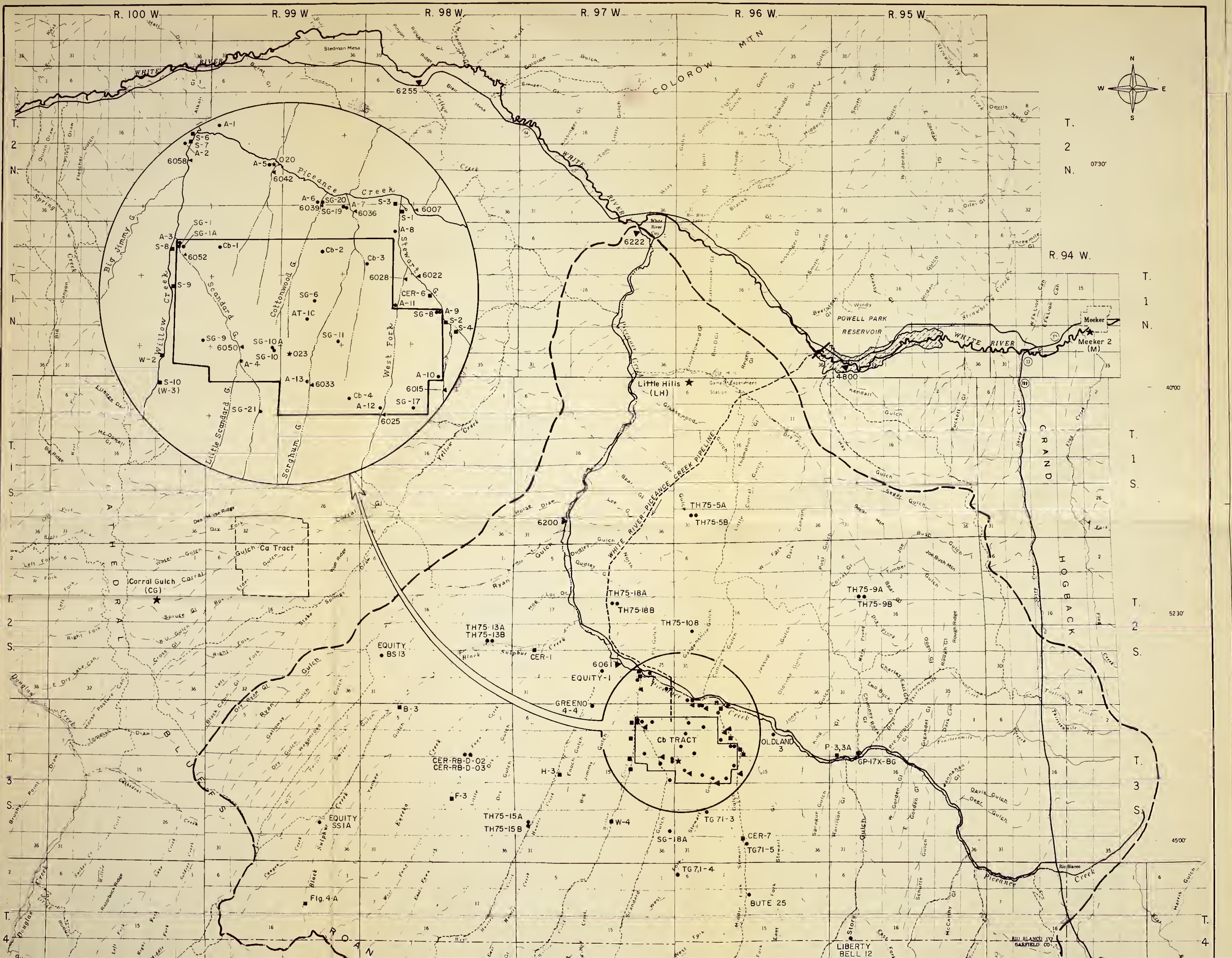
EXHIBIT B

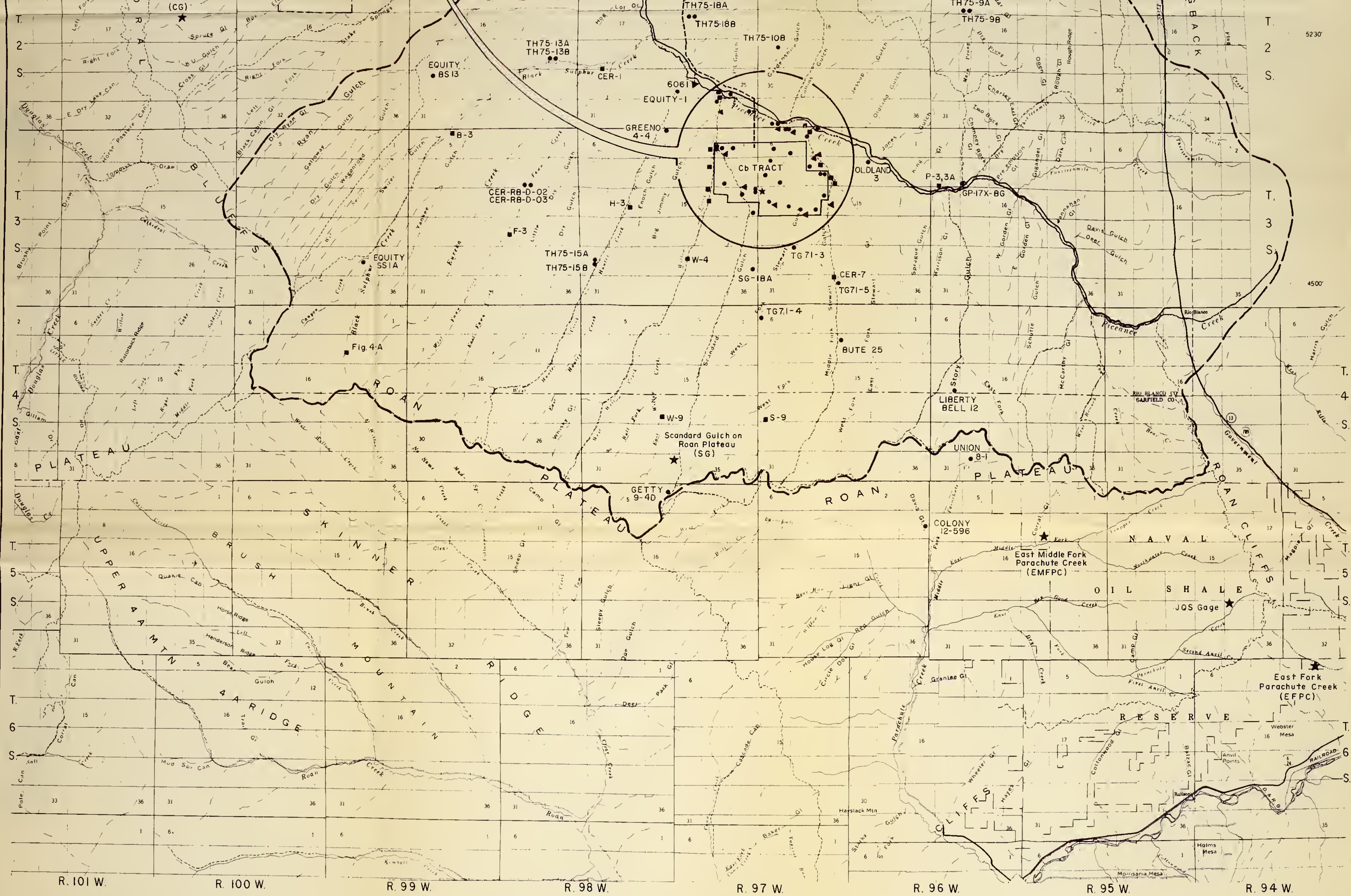
LIST OF STATIONS
OF HYDROLOGIC MONITORING PROGRAM
FOR
Cb TRACT

FIGURE II A-2

TK 162

DECEMBER 1978


R. 100 W.
R. 99 W.
R. 98 W.
R. 97 W.
R. 96 W.
R. 95 W.
R. 94 W.
T. 2 N.
T. 1 N.
T. 1 S.
T. 2 S.
T. 3 S.
T. 4
N
W
E
S
WHITE RIVER
Stedman Mesa
COLOROW MTN
6255
White River City
6222
POWELL PARK RESERVOIR
Meeker
Meeker 2 (M)
4800
Little Hills (LH)
WHITE RIVER-PICEANCE CREEK PIPELINE
GRAND HOGBACK
CATHEDRAL BLUFFS
ROAN
Corral Gulch (CG)
Ca Tract
Cb TRACT
6200
TH75-5A
TH75-5B
TH75-9A
TH75-9B
TH75-18A
TH75-18B
TH75-108
TH75-13A
TH75-13B
EQUITY BS13
CER-1
6061
EQUITY-1
GREENO 4-4
B-3
CER-RB-D-02
CER-RB-D-03
H-3
F-3
TH75-15A
TH75-15B
EQUITY SS1A
W-4
SG-18A
TG 71-3
CER-7
TG71-5
TG7,1-4
BUTE 25
Fig. 4-A
OLDLAND 3
P-3,3A
GP-17X-BG
LIBERTY BELL 12
RIO BLANCO CO
GARFIELD CO
Piceance Creek
Big Jimmy G
Willow Creek
Scandard G
Little Scandard G
Cottonwood G
Sorghum G
West Fork
Stewart G
A-1
S-6
S-7
A-2
6058
A-5
020
6042
A-6
6039
SG-20
SG-19
A-7
6036
S-3
6007
S-1
A-8
SG-1
SG-1A
A-3
S-8
6052
Cb-1
Cb-2
Cb-3
6028
6022
CER-6
A-11
S-9
SG-6
AT-1C
SG-8
A-9
S-2
S-4
SG-9
6050
SG-10A
SG-10
SG-11
★023
A-4
W-2
A-13
6033
A-10
6015
S-10 (W-3)
SG-21
Cb-4
A-12
SG-17
6025
07'30'
40'00'
52'30'
45'00'



(Base map supplied by the United States Geological Survey)

LEGEND

Symbol	Description
◄	Stream gaging station (prefix 0930 omitted from Station No.)
●	Observation well (may have multiple piezometers)
■	Spring or seep
★	Precipitation station
━━	Paved roads
═══	Other roads and trails
— — —	Topographic basin of Piceance Creek

NOTES

See Exhibit B for explanation of monitoring station designations, category and normal frequency of measurements, and entities making measurements.

EXHIBIT A

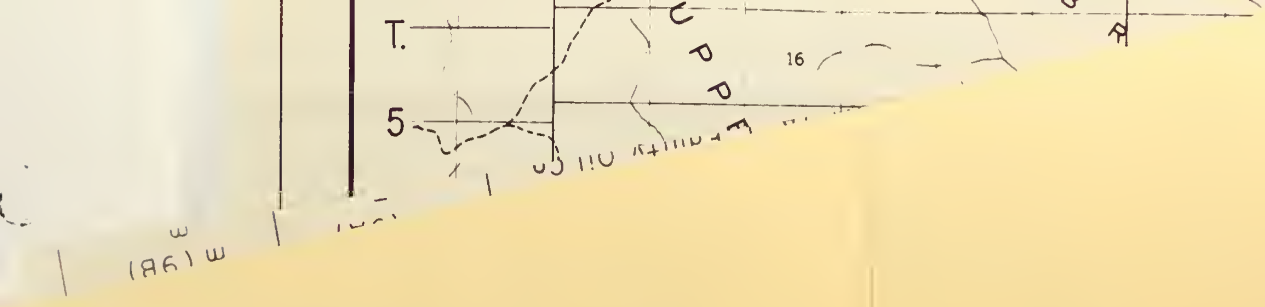
KEY FEATURES OF HYDROLOGIC MONITORING PROGRAM
FOR
Cb TRACT

PICEANCE CREEK BASIN
WATER DIVISION NO. 5
STATE OF COLORADO

DECEMBER 1978

TK 162

FIGURE II A-1


T.
5
16
UPPE

SURFACE STREAMS

II A-1 SURFACE STREAMS

During this report period data were collected at all of the thirteen C-b affiliated surface water gauging stations shown in Figure II A-3. The period covered began in October 1978 and extended through April 1979. Each station is identified and the data collected at each are identified.

Pages II A-13 through II A-202 summarize all data collected at the above mentioned stations.

Table/Figure No.	Description	Page No.
Figure II A-3	USGS Stream Gauging Station Monitoring Network	II A-13
Table II A-2	Surface Water Data Presented	II A-14

An attempt has been made to refer to all stations in terms of their four-digit computer station codes. For additional information on these codes refer to Section IV.

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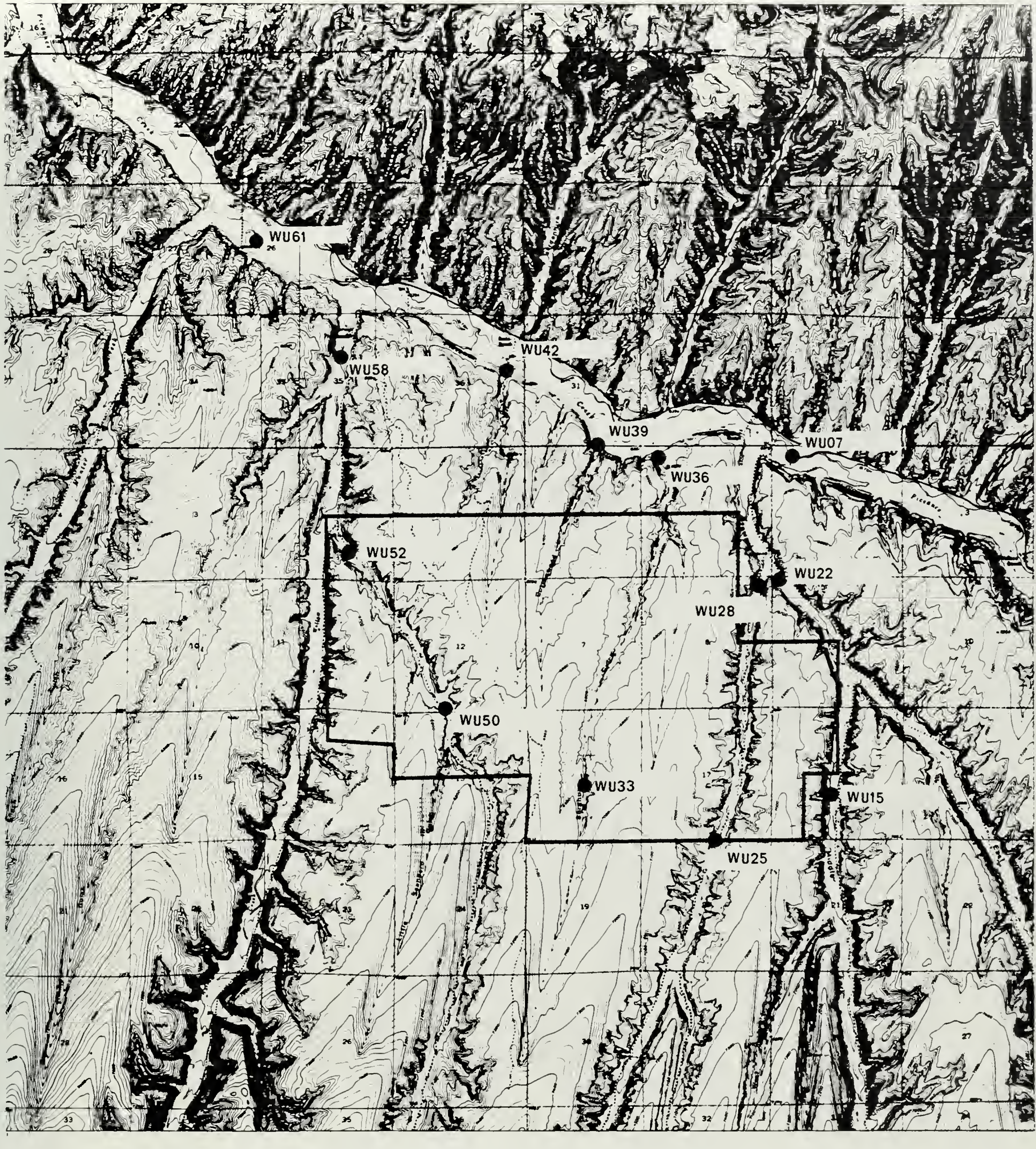

U.S.G.S. STREAM GAUGING STATION MONITORING NETWORK

Figure II A-3

Table II A-2

SURFACE WATER DATA PRESENTED
ENVIRONMENTAL MONITORING REPORT

Station	Discharge (Flow)	Daily Mean Sediment & Discharged Data	Dissolved Oxygen	pH Readings	Specific Conductance	Temperature	Turbidity Valves	Sediment Concentrations	Specific Conductance From PS-69 Samples	Temp., pH, D.O. & Conductivity PS-69 Samples	Water Quality Data Process Date 5/18/79	Water Quality Data Process Data 6/23/79
09306007*	X		X	X	X	X						X
09306015												
09306022*	X		X	X	X	X						X
09306025												
09306028												
09306033												
09306036	X											
09306039	X											
09306042	X											
09306050												
09306052												
09306058*	X		X	X	X	X						X
09306061*	X		X	X	X	X						X
09306175	X											
09306200												X
09306222												X
09306235											X	
09306240											X	
09306242											X	
09306244											X	
09306255											X	

* Major gauging station.

MAJOR GAUGING
STATIONS

USGS WATER GAUGING STATION 09306007
Piceance Creek Below Rio Blanco

A. DAILY TABLES

1. Discharge (Flow)
2. Dissolved Oxygen
3. pH
4. Specific Conductance
5. Temperature

B. WATER QUALITY DATA
PROCESS DATE 6/23/79

09306007

July 1937

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of PICEANCE River / Creek

At / Near BELOW RIO BLANCO, COLO for the Year Ending September 30, 1979

Drainage Area 177 Square Miles. Water-Stage Recorder CONTINUOUS Ratio 1 : 6

Max. G. H. .... ft. at .... on .... (G. H. .... ft.). Max. Disch. .... Sec.-ft. at .... on ....

Min. G. H. .... ft. on .... (G. H. .... ft.). Min. Disch. .... Sec.-ft. on ....

5- DISCHARGE SUBDIVIDED, VARIABLE SHIFT, DISCHARGE ESTIMATED FOR "a" - NO GAGE HEIGHT RECORD, "b" ICE EFFECT.

CALENDAR YEAR

Day	October Gage height	October Discharge	November Gage height	November Discharge	December Gage height	December Discharge	January Gage height	January Discharge	February Gage height	February Discharge	March Gage height	March Discharge
1	2.14	3.1	2.17	6.5	2.15	7.0	a	7.9				
2	2.14	3.2	[illegible]	6.7	2.17	7.6		7.9				
3	[illegible]	1.2	2.20	7.4	2.17	7.6	a	8.1				
4	2.08	1.7	2.21	[illegible]	2.17	7.6	2.14	8.3				
5	2.07	1.5	[illegible]	[illegible]	2.13	6.5	2.13	9.0				
6	2.15	2.5	2.22	[illegible]	2.12	6.3	2.12	7.7				
7	[illegible]	1.3	2.22	[illegible]	2.16	7.4	a	7.7				
8	2.16	3.8	[illegible]	10.4	a	7.4		7.5				
9	2.16	3.9	[illegible]	11.3		7.4		7.5				
10	2.13	3.1	2.27	10.9		7.2		7.4				
11	2.13	[illegible]	2.28	11.2		7.2	a	7.3				
12	1.96	1.2	2.33	12.5		7.0	2.10	-.16 7.2				
13	2.04	2.2	2.26	10.8	a	7.0	a					
14	[illegible]	3.7	[illegible]	10.1	F5 2.12	6.8						
15	[illegible]	1.7	2.23	10.1	2.12	6.8						
16	[illegible]	2.1	[illegible]	10.1	2.12	6.8						
17	[illegible]	1.8	[illegible]	9.7	2.12	6.8	a					
18	[illegible]	[illegible]	[illegible]	10.1	[illegible]	7.1	2.0					
19	2.10	3.8	[illegible]	9.6	2.12	6.8						
20	[illegible]	3.7	2.21	9.4	2.12	7.1						
21	[illegible]	3.1	2.21	9.5	2.12	7.1						
22	[illegible]	4.3	2.19	8.4	2.12	7.1						
23	[illegible]	3.7	2.20	8.5	2.12	7.1						
24	[illegible]	3.1	2.19	8.3	a	7.1						
25	[illegible]	[illegible]	2.19	8.4		7.1						
26	[illegible]	3.4	2.18	8.0		7.3						
27	2.10	[illegible]	2.16	7.5		7.3						
28	[illegible]	[illegible]	2.14	6.8		7.5						
29	[illegible]	[illegible]	2.14	[illegible]		7.5						
30	[illegible]	[illegible]	2.14	6.9		7.7						
31	[illegible]	[illegible]			a	7.7						
Total												
Mean		3.11		9.01		7.16						
Second-feet per square mile												
Run-off in inches												
Run-off in acre-feet												

CLOCK STOPPED

CLOCK STOPPED

PRELIMINARY DATA SUBJECT TO REVISION.

D.O. (mg/l)
Max

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306007 Piceance Cr. bl. Rio Blanco   Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DA
Card No. 01	1			10.8				1							1
	2			12.0				2							2
	3			11.8				3							3
	4			11.8				4							4
	5			11.5				5							5
	6			12.0				6							6
	7							7							7
	8							8							8
Card No. 02	9							9							9
	10							10							10
	11							11							11
	12							12							12
	13							13							13
	14							14							14
	15							15							15
	16							16							16
Card No. 03	17							17							17
	18							18							18
	19							19							19
	20		No data					20							20
	21		999999					21							21
	22		10.9					22							22
	23		11.4					23							23
	24		11.9					24							24
Card No. 04	25		11.8					25							25
	26		11.8					26							26
	27	No data	11.9					27							27
	28		12.0					28							28
	29		11.6					29							29
	30		11.5			-------		30							30
	31		-------			-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

Par Code 00300

Stat Code 00001

Remarks

D.O. (mg/l)
00300

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306007 Piceance Cr. bl. Rio Blanco Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1			10.1				1							1
	2			10.5				2							2
	3			10.0				3							3
	4			10.7				4							4
	5			10.6				5							5
	6			11.3				6							6
	7							7							7
	8							8							8
Card No. 02	9							9							9
	10							10							10
	11							11							11
	12							12							12
	13							13							13
	14							14							14
	15							15							15
	16							16							16
Card No. 03	17							17							17
	18							18							18
	19							19							19
	20		No data					20							20
	21		999992					21							21
	22		9.5					22							22
	23		10.1					23							23
	24		10.0					24							24
Card No. 04	25		9.6					25							25
	26		10.0					26							26
	27	no data	10.1					27							27
	28		10.4					28							28
	29		4.1					29							29
	30		9.9			-------		30							30
	31		-------			-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 – 20	21 – 32

Par Code 00300
Stat Code 00002

Remarks

D.O. (mg/l)
MEAN

Coding Form for Input anc ɔpdate of Daily Values--Continued

Station identification number 09506007 [illegible]

Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1			10.3				1							1
	2			11.2				2							2
	3			11.0				3							3
	4			11.3				4							4
	5			11.0				5							5
	6			11.6				6							6
	7							7							7
	8							8							8
Card No. 02	9							9							9
	10							10							10
	11							11							11
	12							12							12
	13							13							13
	14							14							14
	15							15							15
	16							16							16
Card No. 03	17							17							17
	18							18							18
	19							19							19
	20							20							20
	21		999999					21							21
	22		10.0					22							22
	23		10.6					23							23
	24		10.9					24							24
Card No. 04	25		10.5					25							25
	26		10.7					26							26
	27	no data	10.9					27							27
	28		11.1					28							28
	29		10.4					29							29
	30		10.5			-------		30							30
	31		-------			-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

[illegible] 00300

[illegible] Code 00003

Remarks

pH
MAV

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306007 Piceance Cr. bl. Rio Blanco Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	8.1	8.1	8.2				1							1
	2	8.1	8.1	8.2				2							2
	3	8.2	8.1	8.2				3							3
	4	8.1	8.1	8.2				4							4
	5	8.1	8.2	8.2				5							5
	6	8.1	8.2	8.1				6							6
	7	8.1	8.2					7							7
	8	8.1	8.2					8							8
Card No. 02	9	8.2	8.3					9							9
	10	8.2	8.3					10							10
	11	8.1	8.3					11							11
	12	8.1	8.3					12							12
	13	8.2	8.3					13							13
	14	8.1	8.3					14							14
	15	8.0	8.3					15							15
	16	8.1	8.3					16							16
Card No. 03	17	8.1	8.4					17							17
	18	8.1	8.4					18							18
	19	8.1	8.3					19							19
	20	8.1	8.3					20							20
	21	8.0	8.3					21							21
	22	8.0	8.1					22							22
	23	8.1	8.1					23							23
	24	8.0	8.1					24							24
Card No. 04	25	8.0	8.1					25							25
	26	8.0	8.2					26							26
	27	8.0	8.1					27							27
	28	8.0	8.2					28							28
	29	8.0	8.2					29							29
	30	8.1	8.2			-------		30							30
	31	8.1	-------			-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type T (1) Water year 1979 (17–20) Total value (sum of daily value entries) (21–32)

Parm Code 00400

Stat Code 00021

Remarks

pH
min

Coding Form for Input anu Jpdate of Daily Values--Continued

Station identification number 09306007 Piceance Cr. bl. Rio Blanco Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	7.9	8.0	8.1				1							1
	2	7.9	7.9	8.1				2							2
	3	7.9	7.9	8.1				3							3
	4	7.9	7.9	8.1				4							4
	5	7.9	7.9	8.1				5							5
	6	7.8	8.0	8.1				6							6
	7	7.9	8.0					7							7
	8	7.9	8.0					8							8
Card No. 02	9	7.9	8.1					9							9
	10	7.6	8.1					10							10
	11	7.9	8.2					11							11
	12	7.8	8.2					12							12
	13	7.9	8.2					13							13
	14	7.8	8.2					14							14
	15	7.5	8.2					15							15
	16	7.8	8.2					16							16
Card No. 03	17	7.8	8.3					17							17
	18	7.8	8.3					18							18
	19	7.8	8.2					19							19
	20	7.8	8.2					20							20
	21	7.8	8.0					21							21
	22	7.8	8.0					22							22
	23	7.8	8.1					23							23
	24	7.7	8.1					24							24
Card No. 04	25	7.7	8.1					25							25
	26	7.9	8.1					26							26
	27	7.7	8.1					27							27
	28	7.7	8.1					28							28
	29	7.8	8.1					29							29
	30	7.8	8.1			-------		30							30
	31	7.8	-------			-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

Par Code 00400

Stat Code 00002

Remarks

pH
MEAN

Coding Form for Input a... Update of Daily Values--Continued

Station identification number 09306007 Piceance Cr. bl. Rio Blanco

Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	8.0	8.1	8.1				1							1
	2	8.0	7.9	8.2				2							2
	3	8.1	8.0	8.1				3							3
	4	8.0	8.0	8.1				4							4
	5	8.0	8.0	8.2				5							5
	6	8.0	8.0	8.1				6							6
	7	8.0	8.0					7							7
	8	8.0	8.1					8							8
Card No. 02	9	8.0	8.2					9							9
	10	8.0	8.2					10							10
	11	8.0	8.3					11							11
	12	8.0	8.2					12							12
	13	8.0	8.3					13							13
	14	8.0	8.3					14							14
	15	7.9	8.3					15							15
	16	7.9	8.3					16							16
Card No. 03	17	7.9	8.3					17							17
	18	7.9	8.3					18							18
	19	7.9	8.3					19							19
	20	7.9	8.3					20							20
	21	7.9	8.0					21							21
	22	7.9	8.1					22							22
	23	7.9	8.1					23							23
	24	7.9	8.1					24							24
Card No. 04	25	7.9	8.1					25							25
	26	7.9	8.1					26							26
	27	7.8	8.1					27							27
	28	7.8	8.1					28							28
	29	7.9	8.1					29							29
	30	7.9	8.1			-------		30							30
	31	7.9	-------			-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

Par Code 00400

Stat Code 00003

Remarks

COND (μmhos)
MAX

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306007 Piceance Cr. bl. Rio Blanco Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1			1130				1							1
	2			1090				2							2
	3			1180				3							3
	4			1140.				4							4
	5			1140				5							5
	6							6							6
	7							7							7
	8							8							8
Card No. 02	9							9							9
	10							10							10
	11							11							11
	12							12							12
	13							13							13
	14							14							14
	15							15							15
	16							16							16
Card No. 03	17							17							17
	18							18							18
	19							19							19
	20							20							20
	21		1250					21							21
	22		1220					22							22
	23		1210					23							23
	24		1190					24							24
Card No. 04	25		1170					25							25
	26		1160					26							26
	27	nodata	1180					27							27
	28		1150					28							28
	29		1140					29							29
	30		1130			-------		30							30
	31		-------			-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

Par Code 00095
Stat Code 00001

Remarks

GPO : 1971 O - 442-477

[illegible] (µmhos)

Coding Form for Input and update of Daily Values--Continued

Station identification number 09306007 Piceance Cr. bl. Rio Blanco

Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1			1090				1							1
	2			1070				2							2
	3			1090				3							3
	4			1090				4							4
	5			1080				5							5
	6			1090				6							6
	7							7							7
	8							8							8
Card No. 02	9							9							9
	10							10							10
	11							11							11
	12							12							12
	13							13							13
	14							14							14
	15							15							15
	16							16							16
Card No. 03	17							17							17
	18							18							18
	19							19							19
	20		NO DATA					20							20
	21		1230					21							21
	22		1200					22							22
	23		1190					23							23
	24		1170					24							24
Card No. 04	25		1140					25							25
	26		1130					26							26
	27	no data	1140					27							27
	28		1130					28							28
	29		1130					29							29
	30		1110			-------		30							30
	31		-------			-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

[illegible] 00095

[illegible] Code 00003

Remarks

COND (μmhos)
MEAN

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306007 Piceance Cr. bl. Rio Blanco Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1		↑	1120				1							1
	2			1090				2							2
	3			1140				3							3
	4			1110				4							4
	5			1110				5							5
	6			1090				6							6
	7							7							7
	8							8							8
Card No. 02	9							9							9
	10							10							10
	11							11							11
	12							12							12
	13							13							13
	14							14							14
	15							15							15
	16							16							16
Card No. 03	17							17							17
	18							18							18
	19		↓					19							19
	20		NO DATA					20							20
	21		1240					21							21
	22		1210					22							22
	23		1200					23							23
	24		1180					24							24
Card No. 04	25		1150					25							25
	26		1140					26							26
	27	no data	1160					27							27
	28	↑	1150					28							28
	29		1140					29							29
	30		1120			-------		30							30
	31	↓	-------			-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type T (1)

Water year 1979 (17–20)

Total value (sum of daily value entries) (21–32)

Parm Code 0.20[illegible]

Stat Code [illegible]

Remarks

GPO : 1971 O - 442-477

Temp max (Deg F)

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306007 Piceance Cr. bl. Rio Blanco

Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	14.0	9.0	45				1							1
	2	13.0	10.0	1.8				2							2
	3	12.0	9.5	.2				3							3
	4	13.0	8.0	0.0				4							4
	5	12.0	8.5	0.0				5							5
	6	13.0	9.0	0.0				6							6
	7	13.0	9.0					7							7
	8	12.0	6.0					8							8
Card No. 02	9	13.0	2.5					9							9
	10	12.0	6.5					10							10
	11	12.5	4.5					11							11
	12	13.0	6.0					12							12
	13	11.0	5.0					13							13
	14	12.0	4.5					14							14
	15	12.5	4.5					15							15
	16	11.5	2.0					16							16
Card No. 03	17	10.0	4.5					17							17
	18	12.5	4.0					18							18
	19	13.5	5.0					19							19
	20	10.0	5.5					20							20
	21	10.0	4.6					21							21
	22	9.5	5.3					22							22
	23	11.0	4.5					23							23
	24	10.5	4.3					24							24
Card No. 04	25	9.5	5.3					25							25
	26	10.5	4.3					26							26
	27	10.5	3.7					27							27
	28	10.0	2.7					28							28
	29	10.0	4.0					29							29
	30	9.0	4.8			-------		30							30
	31		-------			-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type T (1)

Water year 1979 (17–20)

Total value (sum of daily value entries) (21–32)

Parm Code 00010

Stat Code 00001

Remarks

GPO 1971 O - 4..477

TEMP (Deg F)
MIN

Coding Form for Input and Update of Daily Values--Continued

Station identification number ~~09306007 Piceance Cr. bl. Rio Blanco~~ Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	6.0	5.0	1.9				1							1
	2	6.5	5.5	0.0				2							2
	3	4.0	5.0	0.0				3							3
	4	4.5	4.5	0.0				4							4
	5	5.0	5.0	0.0				5							5
	6	5.0	3.0	0.0				6							6
	7	5.5	3.0					7							7
	8	5.0	3.0					8							8
Card No. 02	9	5.5	3.0					9							9
	10	5.5	3.0					10							10
	11	6.0	[illegible]					11							11
	12	6.0	3.5					12							12
	13	4.0	1.0					13							13
	14	4.0	2.5					14							14
	15	5.5	3.0					15							15
	16	4.5	2.5					16							16
Card No. 03	17	6.0	2.0					17							17
	18	4.5	0.5					18							18
	19	5.0	0.0					19							19
	20	6.0	1.0					20							20
	21	5.5	2.1					21							21
	22	6.0	2.0					22							22
	23	4.0	.9					23							23
	24	5.0	.3					24							24
Card No. 04	25	5.0	1.1					25							25
	26	4.0	1.3					26							26
	27	5.0	.3					27							27
	28	4.5	0.0					28							28
	29	5.0	.8					29							29
	30	5.5	2.1				-------	30							30
	31		-------			-------		31	-------		-------			-------	31

PROVISIONAL DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

Par Code 00010

Stat Code 00002

Remarks

TEMP MEAN (Deg F)

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306007 Piceance Cr. bl. Rio Blanco   Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	10.5	7.0	3.5				1							1
	2	10.0	8.0	.6				2							2
	3	[illegible]	[illegible]	.1				3							3
	4	[illegible]	7.0	0.0				4							4
	5	5.5	7.0	0.0				5							5
	6	5.5	5.0	.1				6							6
	7	7.0	5.5					7							7
	8	9.0	5.5					8							8
Card No. 02	9	9.0	[illegible]					9							9
	10	9.0	5.0					10							10
	11	9.5	3.0					11							11
	12	9.0	4.5					12							12
	13	7.5	3.0					13							13
	14	7.5	3.5					14							14
	15	[illegible]	3.5					15							15
	16	8.0	2.5					16							16
Card No. 03	17	7.0	3.0					17							17
	18	9.5	2.0					18							18
	19	8.5	2.5					19							19
	20	8.0	3.0					20							20
	21	9.0	3.7					21							21
	22	7.5	3.5					22							22
	23	9.0	2.6					23							23
	24	7.5	2.3					24							24
Card No. 04	25	7.5	3.4					25							25
	26	8.5	2.9					26							26
	27	7.5	2.1					27							27
	28	7.0	1.1					28							28
	29	7.0	2.0					29							29
	30	7.0	3.4			-------		30							30
	31		-------			-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)	
T	1979		Par Code 00010
1	17 20	21 32	Stat Code 00003

Remarks

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306007 - PICEANCE CREEK BELOW RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	TEMPER- ATURE (DEG C)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	WEATHER (WMO CODE NUMBER)	SURFACE AREA (SQ MI)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	COLOR (PLAT- INUM- COBALT UNITS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	PH (UNITS)
OCT											
25...	1115	5.0	80020	1	177	--	15	1350	10.2	--	8.0
NOV											
21...	1100	1.5	80020	1	177	8.4	4	1140	10.5	--	8.1
DEC											
05...	1145	.0	80020	1	177	--	--	1100	10.6	11	8.4
JAN											
18...	1100	4.0	80020	1	177	--	7	1150	10.8	--	8.3
FEB											
21...	1030	3.0	80020	1	177	--	6	1100	10.5	--	8.4
APR											
04...	1145	6.0	80020	--	177	--	5	1080	10.6	--	8.1
18...	1100	--	--	--	177	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
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WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	ALKA-LINITY (MG/L AS CACO3)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)
OCT											
25...	10	530	640	0	--	1.1	--	.99	.70	.01	.01
NOV											
21...	6.6	430	520	0	--	1.3	--	.54	.49	.02	.02
DEC											
05...	--	--	--	--	0	--	--	--	--	--	--
JAN											
18...	4.0	410	500	0	--	1.6	1.1	1.1	.47	.06	.04
FEB											
21...	3.4	430	450	39	--	.73	.64	.38	.28	.02	.02
APR											
04...	3.8	390	480	0	--	.55	.61	.24	.23	.00	.01
18...	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306007 - PICEANCE CREEK BELOW RIO BLANCO, CO.

PROCESS DATE 06/23/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHATE, TOTAL (MG/L AS PO4)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)
OCT											
25...	.01	.04	.71	1.0	.05	.09	.15	.09	.05	.03	6.4
NOV											
21...	.01	.74	.51	.56	.75	.53	.09	.03	.03	.01	5.0
DEC											
05...	--	--	--	--	--	--	--	--	--	--	--
JAN											
18...	.02	.49	.53	1.1	.51	.53	.21	.03	.07	.01	4.9
FEB											
21...	.02	.31	.30	.40	.33	.34	.18	.12	.06	.04	5.6
APR											
04...	.02	.28	.23	.25	.30	.38	.06	.00	.02	.00	8.7
18...	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306007 - PICEANCE CREEK BELOW RIO BLANCO, CO.

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WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	SULFIDE TOTAL (MG/L AS S)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	SODIUM PERCENT	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
OCT											
25...	.5	--	--	430	0	79	57	170	3.6	46	4.0
NOV											
21...	.6	--	--	380	0	63	55	120	2.7	40	2.8
DEC											
05...	--	.00	.1	--	--	--	--	--	--	--	3.0
JAN											
18...	.5	--	--	350	0	67	44	120	2.8	43	3.1
FEB											
21...	.5	--	--	400	0	83	46	120	2.6	40	2.7
APR											
04...	.6	--	--	350	0	67	44	110	2.6	41	2.6
18...	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306007 - PICEANCE CREEK BELOW RIO BLANCO, CO.

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WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SULFATE DIS-SOLVED (MG/L AS SO4)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BORON, DIS-SOLVED (UG/L AS B)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT											
25...	18	230	.8	16	2	--	250	--	--	--	30
NOV											
21...	11	190	.9	14	2	--	240	--	--	--	260
DEC											
05...	--	--	--	--	--	100	--	<1	0	6	--
JAN											
18...	21	180	1.0	16	2	--	210	--	--	--	20
FEB											
21...	15	180	1.0	14	2	--	210	--	--	--	30
APR											
04...	16	170	1.0	14	2	--	190	--	--	--	10
18...	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306007 - PICEANCE CREEK BELOW RIO BLANCO, CO.

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WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	ZINC, DIS-SOLVED (UG/L AS ZN)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	LITHIUM DIS-SOLVED (UG/L AS LI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	ODOR, ATMOS-PHERIC (SEVER-ITY)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)
OCT											
25...	--	130	--	--	--	--	--	--	0	--	--
NOV											
21...	--	60	--	--	--	--	--	--	0	--	--
DEC											
05...	4	--	6	1400	20	20	10	1	0	<3.7	1.6
JAN											
18...	--	50	--	--	--	--	--	--	0	--	--
FEB											
21...	--	60	--	--	--	--	--	--	0	--	--
APR											
04...	--	70	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306007 - PICEANCE CREEK BELOW RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML)	PHENOLS (UG/L)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	PHOS-PHORUS, ORTHO. TOTAL (MG/L AS P)
OCT										
25...	--	--	--	--	--	.10	891	--	1.21	.05
NOV										
21...	--	--	--	--	--	.20	716	16.4	.97	.01
DEC										
05...	.08	--	57	K1800	0	--	--	--	--	--
JAN										
18...	--	--	--	--	--	.00	701	--	.95	.02
FEB										
21...	--	--	--	--	--	.00	725	--	.99	.01
APR										
04...	--	--	--	--	--	.00	663	--	.90	.01
18...	--	400	260	420	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306007 - PICEANCE CREEK BELOW RIO BLANCO, CO.

PROCESS DATE 06/23/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	BROMIDE DIS-SOLVED (MG/L AS BR)	NITRO-GEN, TOTAL (MG/L AS NO3)	MERCURY DIS-SOLVED (UG/L AS HG)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)
OCT										
25...	.01	--	4.6	--	6366.00	--	--	--	--	--
NOV										
21...	.03	--	5.8	--	6366.00	--	--	--	--	--
DEC										
05...	--	.2	--	.0	6366.00	3.2	<7.8	1.9	<3.5	1.5
JAN										
18...	.08	--	7.1	--	6366.00	--	--	--	--	--
FEB										
21...	.03	--	3.2	--	6366.00	--	--	--	--	--
APR										
04...	.00	--	2.4	--	6366.00	--	--	--	--	--
18...	--	--	--	--	6366.00	--	--	--	--	--

USGS WATER GAUGING STATION 09306022
Stewart Gulch Above West Fork

A. DAILY TABLES

1. Discharge (Flow)
2. Dissolved Oxygen
3. pH
4. Specific Conductance
5. Temperature

B. WATER QUALITY DATA
PROCESS DATE 6/23/79

9-183-a. July 1937

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of STEWART GL. AB. W. FK. River Creek

Near RIO BLANCO, COLORADO for the Year Ending September 30, 1977

Drainage Area 59.4 Square Miles. Water-Stage Recorder CONTINUOUS Ratio 1 : 6

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

W. F.K. NR. RIO BLANCO 1977

File Number Washington 09306022
District

Used rating table dated No. 1

Gage Read to .... Once Twice a Day by ....

Gage heights used to half tenths between ... and ... feet; hundredths below and tenths above these limits.

Max. Disch. 38 Sec.-ft. at 1200 on JULY 19 (G. H. 4.05 ft.). Max. G. H. ___ ft. at ___ on ___

Min. Disch. .10 Sec.-ft. on AUG. 20 (G. H. ___ ft.). Min. G. H. ___ ft. on ___

S - DISCHARGE SUBDIVIDED V - VARIABLE SHIFT, DISCHARGE ESTIMATED FOR "a" - NO GAGE HEIGHT RECORD "e" - ICE EFFECT

Day	October Gage height	October Discharge	November Gage height	November Discharge	December Gage height	December Discharge	January Gage height	January Discharge	February Gage height	February Discharge	March Gage height	March Discharge
1	S	0.76	2.70	1.4	2.72	1.6	2.70	1.4	2.73	1.6	a (CLK. STOPPED)	2.0
2	2.70	1.2	2.70	1.4	2.72	1.6	2.70	1.4	2.73	1.6	a	2.0
3	2.71	1.3	2.70	1.4	2.72	1.6	2.70	1.4	2.74	1.7	2.77	2.1
4	2.72	1.5	2.70	1.4	2.72	1.6	2.70	1.4	2.74	1.7	2.77	2.1
5	2.72	1.5	2.70	1.4	2.72	1.6	2.70	1.4	2.74	1.7	2.76	2.0
6	2.72	1.5	2.70	1.4	2.72	1.6	2.70	1.4	2.74	1.7	2.76	2.0
7	2.72	1.5	2.70	1.5	2.71	1.5	2.71	1.5	2.74	1.7	2.77	2.1
8	2.72	1.5	2.70	1.5	2.71	1.5	2.71	1.5	2.74	1.7	2.77	2.1
9	2.71	1.4	2.70	1.5	2.71	1.5	2.71	1.5	2.73	1.6	2.76	2.0
10	2.71	1.4	2.70	1.5	2.71	1.5	2.71	1.5	2.73	1.6	2.76	2.0
11	2.71	1.4	2.70	1.5	2.71	1.5	2.71	1.5	2.74	1.7	2.77	2.1
12	2.72	1.5	a (CLOCK STOPPED)	1.5	2.71	1.5	2.71	1.5	2.74	1.7	2.77	2.1
13	2.72	1.5		1.5	2.71	1.5	2.72	1.6	2.74	1.7	2.76	2.0
14	2.72	1.5		1.5	2.71	1.5	2.72	1.6	2.75	1.8	2.74	1.7
15	2.72	1.5	a	1.5	2.71	1.5	2.72	1.6	2.76	2.0	2.74	1.7
16	2.72	1.5	2.70	1.5	2.71	1.5	2.73	1.7	2.75	1.8	2.74	1.7
17	2.72	1.5	2.70	1.5	2.71	1.5	2.73	1.7	2.75	1.8	2.73	1.6
18	2.72	1.5	2.70	1.5	2.70	1.4	2.73	1.7	2.75	1.8	2.73	1.6
19	2.72	1.5	2.70	1.5	2.70	1.4	2.73	1.7	2.75	1.8	2.74	1.7
20	2.72	1.5	2.69	1.4	2.70	1.4	2.73	1.7	2.75	1.8	2.74	1.7
21	2.72	1.5	2.70	1.5	2.70	1.4	2.73	1.7	2.74	1.7	2.74	1.7
22	2.72	1.6	2.70	1.5	2.70	1.4	2.73	1.7	2.74	1.7	2.74	1.7
23	2.72	1.6	2.70	1.5	2.70	1.4	2.74	1.8	2.74	1.7	2.73	1.6
24	2.72	1.6	2.70	1.5	2.70	1.4	2.73	1.7	2.74	1.7	2.73	1.6
25	2.72	1.6	2.70	1.5	2.70	1.4	2.73	1.7	2.75	1.8	2.73	1.6
26	2.72	1.6	2.70	1.5	2.70	1.4	2.73	1.7	a (CLK. STOPPED)	1.8	2.73	1.6
27	2.72	1.6	2.71	1.6	2.70	1.4	2.73	1.6	a	1.9	2.72	1.5
28	2.71	1.5	2.71	1.6	2.70	1.4	2.73	1.6	a	1.9	2.73	1.6
29	2.71	1.5	2.72	1.7	2.70	1.4	2.73	1.6	×	×	2.73	1.6
30	2.71	1.5	2.72	1.7	2.70	1.4	2.73	1.6	×	×	2.73	1.6
31	2.70	1.4	×	×	2.70	1.4	2.73	1.6	×	×	2.73	1.6
Total		45.46		44.9		45.7		49.0		48.7		56.0
Mean		1.47		1.50		1.47		1.58		1.74		1.81
Second-feet per square mile												
Run-off in inches												
Run-off in acre-feet												
Maximum												
Minimum												

Day	April Gage height	April Discharge	May Gage height	May Discharge	June Gage height	June Discharge	July Gage height	July Discharge	August Gage height	August Discharge	September Gage height	September Discharge
1	2.74	1.7	2.70	1.3	2.69	1.0	2.71	1.3	2.71	1.3	2.67	1.0
2	2.74	1.7	2.70	1.3	2.69	1.0	2.71	1.3	2.71	1.3	2.67	1.0
3	2.74	1.7	2.70	1.3	2.69	1.0	2.71	1.3	2.71	1.3	S	2.0
4	2.74	1.7	2.70	1.3	2.69	1.0	2.71	1.3	2.70	1.4	2.66	.93
5	2.75	1.8	2.69	1.2	2.69	1.0	2.71	1.3	2.70	1.4	2.66	.93
6	2.74	1.7	2.69	1.3	2.70	1.0	2.71	1.4	2.70	1.4	2.72	1.0
7	2.74	1.7	2.68	1.2	2.70	1.0	2.71	1.4	2.70	1.4	2.92	1.0
8	2.73	1.6	2.68	1.2	2.70	1.0	2.71	1.4	2.70	1.4	3.10	1.2
9	2.73	1.6	2.69	1.3	2.70	1.0	2.71	1.4	2.70	1.4	3.19	1.1
10	2.73	1.6	2.69	1.3	2.71	1.0	2.71	1.4	S	.73	3.23	1.1
11	2.73	1.6	2.69	1.3	2.71	1.0	2.71	1.4	2.45	.13	3.28	1.1
12	2.73	1.6	2.69	1.3	2.71	1.0	2.70	1.3	2.45	.13	3.28	1.1
13	2.73	1.6	2.69	1.3	2.71	1.0	2.70	1.3	2.46	.15	3.27	1.0
14	2.73	1.6	2.70	1.4	2.71	1.0	2.70	1.3	2.46	.15	3.26	1.0
15	2.73	1.6	2.70	1.4	S	1.0	S	1.2	2.46	.15	3.28	1.1
16	2.73	1.6	2.69	1.2	2.69	1.1	2.68	1.3	2.46	.15	3.28	1.1
17	2.73	1.6	2.70	1.3	2.69	1.1	2.68	1.2	2.49	.22	3.28	1.1
18	2.73	1.6	2.70	1.3	2.69	1.1	2.68	1.1	2.50	.25	3.28	1.1
19	2.72	1.5	2.70	1.3	2.69	1.1	S	1.8	2.50	.25	3.28	1.1
20	2.73	1.5	2.69	1.2	2.69	1.1	2.71	1.3	2.44	.10	S	1.1
21	2.72	1.5	2.69	1.2	2.70	1.2	2.71	1.3	2.45	.13	2.67	1.1
22	2.72	1.5	2.69	1.1	2.70	1.2	2.72	1.4	[illegible]	.15	2.67	1.1
23	2.72	1.5	2.69	1.1	2.70	1.2	S	3.3	2.46	.15	2.66	1.0
24	2.72	1.5	2.69	1.1	2.70	1.2	2.73	1.5	2.47	.17	2.66	1.0
25	2.72	1.5	2.69	1.1	2.70	1.2	2.72	1.4	2.48	.20	2.66	1.0
26	2.72	1.5	2.69	1.1	2.70	1.2	2.71	1.3	2.48	.20	2.66	1.0
27	2.72	1.5	2.69	1.1	2.70	1.2	2.71	1.3	S	.81	2.66	1.0
28	2.71	1.4	2.69	1.0	2.70	1.2	2.71	1.3	2.68	1.0	2.66	1.0
29	2.71	1.4	2.69	1.0	2.70	1.2	2.71	1.3	2.67	1.0	2.66	1.0
30	2.70	1.3	2.69	1.0	2.70	1.2	2.71	1.3	2.67	1.0	2.66	1.0
31	×	×	2.69	1.0	×	×	2.71	1.3	2.67	1.0	×	×
Total		47.2		37.5		32.5		43.4		20.52		32.26
Mean		1.57		1.21		1.08		1.40		.66		1.08
Second-feet per square mile												
Run-off in inches												
Run-off in acre-feet												
Maximum												
Minimum												

	Calendar Year 1976	Water Year 1977
Total	624.38	503.14
Mean		1.38

Quarter	First	Second	Third	Fourth
Computed	BME	BME	BME	
Checked	—	CEK	—	
Date	3-22-78			
Disch. applied	BME	BME	BME	
Disch. checked	—	CEK	—	
Date	3-22-78			
G. H. copied	BME	BME	BME	
G. H. checked	—	CEK	—	
Date	3-22-78			

PRELIMINARY RECORD
SUBJECT TO REVISION

PRELIMINARY RECORD
SUBJECT TO REVISION

GPO 857 667

9-192-a. July 1957

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of STEWART GULCH BL WHITECL R 6 L River ~~Creek~~

at ~~Near~~ RIO BLANCO, COLO for the Year Ending September 30, 1979.

Drainage Area 59.4 Square Miles. Water-Stage Recorder CONTINUOUS Ratio 1 : 6

Max. Disch. .... Sec.-ft. on .... (G. H. .... ft.). Max. G. H. .... ft. on ....

Min. Disch. .... Sec.-ft. on .... (G. H. .... ft.). Min. G. H. .... ft. on ....

S - DISCHARGE SUBDIVIDED V - VARIABLE SHIFT. DISCHARGE ESTIMATED FOR

"a" - NO gage height record "b" - ice effect

Calendar Year

Day	October		November		December		January		February		March	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1	2.63	.73	2.65	.84	2.68	1.04	"a"	[illegible]				
2	2.63	.74	2.65	.82	2.68	1.04	↕	[illegible]				
3	2.64	.79	2.65	.80			"a"	[illegible]				
4	2.64	.77	2.65	.82	2.69	1.31	2.65	1.22				
5	2.64	.79	2.65	.83	2.69	1.30	2.66	1.30				
6	2.65	.84	2.65	.85	2.69	1.39	2.67	1.37				
7	2.65	.84	2.65	.84	2.69 SV	1.42	2.67	1.40				
8	2.65	.84	2.65	.84	2.69	1.36	"a"	1.35				
9	2.66	.86	2.66	.90	2.69	1.37	2.66	1.25				
10	2.66	.83	2.66	.91	2.69	1.40	2.65	1.22				
11	2.66	.83	2.67	.99	2.65	1.31	2.65	1.23				
12	2.66	.87	2.68	1.03	2.68	1.33	2.66	1.25				
13	2.66	.81	2.67	.99	"a"	.32						
14	2.66	.81	2.68	1.01		1.35						
15	2.65	.79	2.68	1.03		1.32						
16	2.64	.74	2.69	1.08	CLOCK STOPPED	32						
17	2.64	.74	2.69	1.08		[illegible]						
18	2.64	.73	2.69	1.08		[illegible]						
19	2.63	.71	2.69	1.14	"a"	[illegible]						
20	2.64	.75	[illegible] 2.70	1.17	2.67	1.31						
21	2.64	.75	2.69	1.11	2.67	1.30						
22	2.64	.76	2.68	1.08	2.68	1.36						
23	2.64	.76	2.69	1.10	2.67	1.32						
24	2.65	.80	2.69	1.11	2.67	30						
25	2.65	.80	2.69	1.11	2.67	1.32						
26	2.66	.85	2.70	1.18	2.68	1.34						
27	2.66	.83	2.70	1.15	2.68	1.36						
28	2.66	.87	2.69	1.12	2.68	.43						
29	2.66	.88	2.69	1.13	2.69	1.47						
30	2.67	.91	2.68	1.08	2.69	1.48						
31	[illegible] 2.66	.67			"a"	1.42						
Total												
Mean		.81		1.04		1.33						
Second-feet per square mile												
Run-off in inches												
Run-off in acre-feet												

PRELIMINARY DATA SUBJECT TO REVISION

(mg/l)

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09506022 Stewart Gulch

Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)
Card No. 01	1	[illegible]	10.4	10.7	↑	↑	10.4	1						
	2	9.1	10.2	12.0			10.1	2						
	3	9.7	10.5	11.8		↓	10.4	3						
	4	9.4	11.1	11.8		999999	10.7	4						
	5	9.3	11.0	10.4		↑	11.0	5						
	6	9.8	11.2	10.4			10.6	6						
	7	9.5	10.8	11.2			no data	7						
	8	9.5	10.8	↑ NO DATA				8						
Card No. 02	9	9.5	10.8					9						
	10	8.9	11.0	FROZE				10						
	11	8.5	12.5					11						
	12	9.1	11.2					12						
	13	9.2	12.6					13						
	14	9.2	11.9					14						
	15	9.3	11.0					15						
	16	9.6	12.5					16						
Card No. 03	17	9.2	12.5		[illegible]			17						
	18	9.1	12.0		999999			18						
	19	9.1	11.3		↑	↓		19						
	20	↑	11.2			999999		20						
	21		11.2			11.1		21						
	22	No Data	12.4			11.2		22						
	23		12.2			12.1		23						
	24		12.6			12.4		24						
Card No. 04	25	↓	13.6			12.0		25						
	26	9.6	11.2			11.4		26						
	27	9.7	11.8			11.2		27						
	28	10.0	11.6			10.8		28						
	29	9.6	11.6			——		29						
	30	10.0	11.8			-------		30						
	31	9.9	-------	↓	↓	-------		31	-------		-------			-------

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

PRELIMINARY REC
SUBJECT TO REVI

Remarks

(mg/l)

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306022 ~~Stewart~~ Gulch   Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)
Card No. 01	1	5.0	4.1	8.0	↑	999999	8.0	1						
	2	[illegible]	3.6	8.4		999999	7.9	2						
	3	5.6	4.3	8.6		999999	8.0	3						
	4	5.3	4.2	8.2		999999	8.4	4						
	5	4.4	4.6	8.2			7.9	5						
	6	5.1	5.0	8.6			7.6	6						
	7	4.5	4.7	8.9			No data	7						
	8	4.2	4.6	— NO DATA				8						
Card No. 02	9	5.5	4.3			999999		9						
	10	5.8	5.0			999999		10						
	11	3.6	5.3					11						
	12	3.4	4.6			999999		12						
	13	3.7	5.4			999999		13						
	14	3.4	5.7					14						
	15	3.4	5.8					15						
	16	4.2	6.1					16						
Card No. 03	17	3.8	6.2		↓ NO DATA			17						
	18	4.3	6.5		999999			18						
	19	6.2	6.1		999999			19						
	20	↑	7.0			999999		20						
	21		7.6			8.2		21						
	22	NO DATA	7.8		999999	8.3		22						
	23		8.2			8.6		23						
	24		7.8		999999	9.2		24						
Card No. 04	25	↓	7.6		999999	9.0		25						
	26	4.4	8.0		999999	8.4		26						
	27	4.2	8.4		999999	8.2		27						
	28	4.0	8.2			8.2		28						
	29	3.8	8.0			—		29						
	30	4.2	8.0		999999	-------		30						
	31	4.3	-------	↓	999999	-------		31	-------		-------			-------

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

Parm Code 00300

STAT Code 00003

PRELIMINARY RECORD
SUBJECT TO REVISION

Remarks

(mg/l)

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306022 Stewart Gulch   Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)
Card No. 01	1	7.0	6.7	8.1			8.8	1						
	2	7.1	6.3	9.4			9.7	2						
	3	7.6	6.4	9.6			9.0	3						
	4	7.4	6.9	[illegible]		999999	8.9	4						
	5	6.9	6.8	[illegible]			8.9	5						
	6	7.2	7.4	[illegible]			8.7	6						
	7	6.9	7.3	9.5				7						
	8	6.7	7.1	— NO DATA				8						
Card No. 02	9	6.5	7.0			999999		9						
	10	6.1	5.5					10						
	11	[illegible]	7.7					11						
	12	6.0	6.6					12						
	13	5.9	7.8					13						
	14	4.8	7.6					14						
	15	5.1	7.9					15						
	16	6.4	7.7					16						
Card No. 03	17	6.0	8.1		— NO DATA			17						
	18	6.0	8.2		999999			18						
	19	7.0	8.0					19						
	20		8.3			999999		20						
	21		8.9			7.9		21						
	22	No Data	9.2			[illegible]		22						
	23		8.6			10.1		23						
	24		8.9			10.3		24						
Card No. 04	25		9.1			10.1		25						
	26	6.7	8.9			9.6		26						
	27	6.6	9.4			9.4		27						
	28	6.6	9.1			9.2		28						
	29	6.4	9.1			—		29						
	30	6.5	9.0			-------		30						
	31	6.5	-------			-------		31	-------		-------			-------

TOTAL CHECK CARD

Type: T (column 1)

Water year: 1979 (columns 17–20)

Total value (sum of daily value entries): (columns 21–32)

Par Code 00300

Stat Code 00003

PRELIMINARY RECORD
SUBJECT TO REVISION

Remarks

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306022 Stewart Gulch Water year 1980

Card	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	8.6	8.0	8.0		999999	8.2	1							1
	2	8.6	8.0	8.1		↕	8.2	2							2
	3	8.6	8.0	8.1			8.2	3							3
	4	8.6	8.0	8.0		999999	8.1	4							4
	5	8.6	8.0	7.9			8.2	5							5
	6	8.6	8.0	8.0			8.1	6							6
	7	8.6	8.0	7.9			8.1	7							7
	8	8.6	8.0	NO DATA			8.2	8							8
Card No. 02	9	8.6	8.0				8.2	9							9
	10	8.6	8.1				8.2	10							10
	11	8.6	8.1		[illegible]		8.1	11							11
	12	8.6	8.1				8.2	12							12
	13	8.6	8.1				8.2	13							13
	14	8.5	8.1				8.2	14							14
	15	8.6	8.1				8.2	15							15
	16	8.6	8.1				8.2	16							16
Card No. 03	17	8.6	8.1				8.2	17							17
	18	8.6	8.1		NO DATA		8.2	18							18
	19	8.6	8.0				8.2	19							19
	20	↑	8.1				8.2	20							20
	21		8.1	[illegible]		8.2	8.2	21							21
	22	No Data	8.1			8.2	8.2	22							22
	23		8.1			8.2	8.2	23							23
	24		8.1			8.2	8.2	24							24
Card No. 04	25	↓	8.1			8.1	8.2	25							25
	26	8.0	8.1			8.2	8.2	26							26
	27	8.0	8.1			8.2		27							27
	28	8.0	8.0			8.1		28							28
	29	8.0	8.1			——		29							29
	30	8.0	8.1			-------		30							30
	31	8.0	-------			-------		31	-------		-------			-------	31

TOTAL CHECK CARD

Type T (1) Water year [illegible] (17–20) Total value (sum of daily value entries) (21–32)

PRELIMINARY REPORT SUBJECT TO REVISION

Remarks

Coding Form for Input and Update of Daily Values--Continued

Station identification number 03306022 Stewart Gulch

Water year [illegible]

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT
Card No. 01	1	[illegible]	7.6	7.6		999999	8.0	1						
	2	8.5	7.7	7.7			8.0	2						
	3	8.6	7.6	7.6			8.1	3						
	4	8.4	7.8	7.7		999999	8.1	4						
	5	8.4	7.8	7.7			8.0	5						
	6	8.4	7.8	7.8			8.0	6						
	7	8.4	7.8	7.8			8.0	7						
	8	8.4	7.8	7.7			8.0	8						
Card No. 02	9	8.4	7.8	NO DATA			8.1	9						
	10	8.4	7.9				8.1	10						
	11	8.4	7.8				8.0	11						
	12	8.4	7.8				8.0	12						
	13	8.4	7.9				8.0	13						
	14	8.4	7.9				8.0	14						
	15	8.4	7.9				8.0	15						
	16	8.4	7.9				8.1	16						
Card No. 03	17	8.4	7.9				8.1	17						
	18	8.4	7.9		NO DATA		8.1	18						
	19	8.5	7.9				8.1	19						
	20		7.9				8.1	20						
	21		7.9			8.0	8.1	21						
	22		7.9			8.0	8.1	22						
	23		7.9			8.0	8.0	23						
	24		7.9			8.0	8.1	24						
Card No. 04	25		7.9			8.0	8.0	25						
	26	7.8	7.9			8.0	8.0	26						
	27	7.8	7.9			8.0		27						
	28	7.8	7.9			8.0		28						
	29	7.8	7.9					29						
	30	7.8	7.9			-------		30						
	31	7.8	-------			-------		31	-------		-------			-------

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	[illegible]	
1	17 20	21 32

Par Code 00400

Stat Code 00003

PRELIMINARY RECORD
SUBJECT TO REVISION

Remarks

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306022 Stewart Gulch Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)
Card No. 01	1	8.5	7.9	7.9	↑	999999	8.1	1						
	2	8.5	7.8	8.0		↕	8.1	2						
	3	8.6	7.9	7.9			8.1	3						
	4	8.5	7.9	7.8		999999	8.1	4						
	5	8.5	7.9	7.8			8.1	5						
	6	8.5	7.9	7.9			8.1	6						
	7	8.5	7.9	7.8			8.1	7						
	8	8.5	7.9	↑ NO DATA			8.1	8						
Card No. 02	9	8.5	7.9				8.1	9						
	10	8.5	8.0				8.1	10						
	11	8.5	8.0				8.1	11						
	12	8.5	7.9				8.1	12						
	13	8.5	8.0				8.1	13						
	14	8.4	8.0				8.1	14						
	15	8.6	8.0				8.1	15						
	16	8.5	8.0				8.1	16						
Card No. 03	17	8.5	8.0				8.1	17						
	18	8.5	8.0		↓ NO DATA		8.1	18						
	19	8.5	7.9				8.1	19						
	20	↑	7.9				8.1	20						
	21		8.0			8.1	8.1	21						
	22	No Data	8.0			8.1	8.2	22						
	23		8.0			8.1	8.1	23						
	24	↓	8.0			8.1	8.1	24						
Card No. 04	25		8.0			8.1	8.1	25						
	26	7.9	7.9			8.1	8.1	26						
	27	7.9	8.0			8.1		27						
	28	7.9	7.9			8.1		28						
	29	7.9	7.9			—		29						
	30	7.9	7.9			-------		30						
	31	7.9	-------	↓		-------		31	-------		-------			-------

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

Par Code 00400

Stat Code [illegible]

PRELIMINARY RECORD
SUBJECT TO REVISION

Remarks

MAX (µmhos)

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306022 Stewart Gulch Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)
Card No. 01	1	[illegible]	[illegible]	[illegible]		999999	1300	1						
	2	[illegible]	[illegible]	[illegible]			1300	2						
	3	[illegible]	[illegible]	[illegible]			1300	3						
	4	[illegible]	[illegible]	[illegible]		999999	1300	4						
	5	[illegible]	[illegible]	[illegible]			1300	5						
	6	[illegible]	[illegible]	1180			1300	6						
	7	[illegible]	[illegible]	1180			1300	7						
	8	[illegible]	[illegible]	No Data			1300	8						
Card No. 02	9	[illegible]	1190				1300	9						
	10	[illegible]	1180				1300	10						
	11	[illegible]	1180				1300	11						
	12	[illegible]	1180				1300	12						
	13	1386	[illegible]				1300	13						
	14	[illegible]	[illegible]				1300	14						
	15	[illegible]	[illegible]				1300	15						
	16	1386	[illegible]				1300	16						
Card No. 03	17	1386	[illegible]		No Data		1300	17						
	18	1386	1180		999999		1300	18						
	19	[illegible]	[illegible]				1300	19						
	20		1200				1300	20						
	21		1190			1300	1300	21						
	22		1180			1300	1300	22						
	23	No Data	1180			1300	1300	23						
	24		1180		999999	1300	1300	24						
Card No. 04	25		[illegible]			1300	1300	25						
	26	1190	1080			1300	1300	26						
	27	1190	[illegible]			1300		27						
	28	1190	[illegible]			1300		28						
	29	1190	[illegible]					29						
	30	[illegible]	[illegible]			-------		30						
	31	[illegible]	-------			-------		31	-------		-------			-------

TOTAL CHECK CARD

Type T (1) Water year 1979 (17–20) Total value (sum of daily value entries) (21–32)

PRELIMINARY RECORD SUBJECT TO REVISION

Remarks

(μ mhos)

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306022 Stewart Gulch Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)
Card No. 01	1	[illegible]	1160	1110	↑	999999	1280	1						
	2	[illegible]	1160	1160		↕	1280	2						
	3	1330	[illegible]	1160			1280	3						
	4	[illegible]	[illegible]	1160		999999	[illegible]	4						
	5	[illegible]	[illegible]	1140			1280	5						
	6	1372	[illegible]	1160			1260	6						
	7	1376	1160	1160			1100	7						
	8	1374	1160	↑ NO DATA			[illegible]	8						
Card No. 02	9	1374	[illegible]				1360	9						
	10	1374	1160				1360	10						
	11	1374	1100				1200	11						
	12	1372	1100				1160	12						
	13	1372	1160				1240	13						
	14	1374	1150				1240	14						
	15	1373	1160				1240	15						
	16	1370	1150				1220	16						
Card No. 03	17	1362	1160		↓ NO DATA		1260	17						
	18	1374	1160		999999		1270	18						
	19	1378	1160		↕		1270	19						
	20	↑	1160				1390	20						
	21		1170			1280	1260	21						
	22	No Data	1160			1240	1260	22						
	23		1160			1280	1260	23						
	24	↓	1160		999999	1260	1270	24						
Card No. 04	25	—	1170			1270	1260	25						
	26	1180	1160			1250	1280	26						
	27	1180	1160			1260		27						
	28	[illegible]	1160			1270		28						
	29	1180	1160			—		29						
	30	1170	1160			-------		30						
	31	1170	-------	↓		-------		31	-------		-------			-------

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

PRELIMINARY REC
SUBJECT TO REVIS

Remarks

(μ mhos)

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306022 Stewart Gulch Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)
Card No. 01	1	[illegible]	[illegible]	1110	↑	999999	[illegible]	1						
	2	1387	1180	1170		↕	1290	2						
	3	[illegible]	1130	[illegible]			1290	3						
	4	[illegible]	[illegible]	1130		999999	1300	4						
	5	[illegible]	1180	[illegible]			1290	5						
	6	1382	1180	[illegible]			1290	6						
	7	1383	1130	[illegible]			1260	7						
	8	[illegible]	[illegible]	↑ No Data			1280	8						
Card No. 02	9	1384	1180				1290	9						
	10	1383	1170				1290	10						
	11	1383	1150				1280	11						
	12	1382	1150				1270	12						
	13	1381	[illegible]				1290	13						
	14	[illegible]	1180				1290	14						
	15	[illegible]	[illegible]				1290	15						
	16	1381	[illegible]				1290	16						
Card No. 03	17	1380	[illegible]		↓ No Data		1250	17						
	18	1381	[illegible]		999999		1290	18						
	19	1382	[illegible]		↑		1290	19						
	20	↑	1150				1290	20						
	21		1150			1290	1290	21						
	22		1180			1285	1290	22						
	23	No Data	1180		↓	1270	1290	23						
	24		1130		999999	1290	1290	24						
Card No. 04	25	↓	1160			1290	1290	25						
	26	1180	1170			1290	12-90	26						
	27	[illegible]	1150			1290		27						
	28	1130	1180			1290		28						
	29	[illegible]	1180			—		29						
	30	1180	1180			-------		30						
	31	[illegible]	-------	↓		-------		31	-------		-------			-------

TOTAL CHECK CARD

Type: T (1)

Water year: 1979 (17–20)

Total value (sum of daily value entries) (21–32)

Par Code [illegible]

Stat Code [illegible]

PRELIMINARY RECORD
SUBJECT TO REVISION

Remarks

(DegF)

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306022 Stewart Gulch   Water year [illegible]

Card	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	12.0	12.0	7.0		[illegible]	9.0	1							1
	2	12.1	13.0	5.0			9.0	2							2
	3	11.7	12.0	6.0			10.0	3							3
	4	12.1	11.0	6.0		[illegible]	10.5	4							4
	5	12.6	11.0	[illegible]			10.0	5							5
	6	11.1	10.0	4.0			12.5	6							6
	7	9.0	11.0	3.0			13.5	7							7
	8	12.5	12.0	No Data			12.5	8							8
Card No. 02	9	11.5	[illegible]				11.0	9							9
	10	12.0	7.0				12.0	10							10
	11	10.9	7.0		INTAKE FROZEN		13.1	11							11
	12	12.1	7.0				13.5	12							12
	13	9.9	7.0				13.5	13							13
	14	9.7	7.0				12.5	14							14
	15	8.0	6.0				13.0	15							15
	16	11.3	8.0				13.5	16							16
Card No. 03	17	10.6	8.0				13.5	17							17
	18	[illegible]	8.5		NO DATA		10.5	18							18
	19	3.7	10				13.5	19							19
	20		12.0				11.5	20							20
	21		9.0	INTAKE FROZEN		8.5	10.5	21							21
	22	No Data	9.0			7.0	9.0	22							22
	23		8.5			9.0	13.5	23							23
	24		8.0			11.0	14.[illegible]	24							24
Card No. 04	25		10.0			11.0	14.5	25							25
	26	11.0	7.0			9.0	10.0	26							26
	27	12.0	5.0			3.5		27							27
	28	12.0	6.0			11.0		28							28
	29	11.0	[illegible]		8.0	—		29							29
	30	9.0	8.0			-------		30							30
	31	12.0	-------			-------		31	-------		-------			-------	31

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	[illegible]	
1	17 20	21 32

[illegible] 00010

[illegible] code [illegible]

PRELIMINARY RECORD
SUBJECT TO REVISION

Remarks

(Deg F)

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306022 Stewart Gulch Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)
Card No. 01	1	[illegible]	4.0	4.0		999999	5.0	1						
	2	[illegible]	5.0	0.0			5.0	2						
	3	2.9	3.0	0.0			3.0	3						
	4	3.0	3.0	3.0		999999	3.0	4						
	5	4.0	4.0	3.0			4.0	5						
	6	3.0	2.0	2.0			6.0	6						
	7	2.3	2.0	1.0			5.5	7						
	8	3.6	3.0	No DATA			5.0	8						
Card No. 02	9	3.7	3.0				4.0	9						
	10	5.1	[illegible]				5.0	10						
	11	6.3	2.0				3.8	11						
	12	4.5	3.0				4.0	12						
	13	5.0	2.0		[illegible]		5.0	13						
	14	7.9	3.0				4.0	14						
	15	5.4	4.0				5.0	15						
	16	3.7	3.6				5.0	16						
Card No. 03	17	4.2	2.5			3.5	4.0	17						
	18	3.6	2.0		NO DATA	4.5	5.0	18						
	19	2.2	2.0				5.5	19						
	20		2.0				6.0	20						
	21		2.5			4.5	5.1	21						
	22		3.0	[illegible]		3.5	5.0	22						
	23	No Data	3.0			3.0	4.0	23						
	24		2.0			3.0	4.0	24						
Card No. 04	25		2.0			3.0	5.0	25						
	26	4.0	3.?			4.0	6.0	26						
	27	2.5	1.0			4.0		27						
	28	3.0	2.0			3.5		28						
	29	3.0	3.0			—		29						
	30	4.0	4.0			-------		30						
	31	4.0	-------			-------		31	-------		-------			-------

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17–20	21–32

Par Code 00010

Stat Code 00002

PRELIMINARY RECORD
SUBJECT TO REVISION

Remarks ______

(Deg F)

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306022 Stewart Gulch

Water year [illegible]

Card No.	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)
Card No. 01	1	[illegible]	[illegible]	5.0		999999	6.5	1						
	2	[illegible]	5.0	3.0			7.0	2						
	3	7.2	7.5	2.5			6.0	3						
	4	7.4	6.5	4.5		999999	5.5	4						
	5	7.7	6.5	3.5			6.5	5						
	6	7.1	5.5	2.5			8.0	6						
	7	6.9	5.5	2.0			8.0	7						
	8	7.2	6.0	No DATA			7.0	8						
Card No. 02	9	7.2	6.0				6.0	9						
	10	7.7	5.0				6.0	10						
	11	8.6	4.5				7.0	11						
	12	7.9	5.5				7.0	12						
	13	7.5	4.5				7.5	13						
	14	.6	5.0				7.1	14						
	15	7.4	5.0				7.5	15						
	16	6.6	5.0				8.1	16						
Card No. 03	17	6.6	4.5				8.0	17						
	18	6.6	4.0		No DATA		7.0	18						
	19	2.7	4.5				8.0	19						
	20		4.5				7.6	20						
	21		4.5	[illegible]		6.0	7.0	21						
	22		5.0			5.0	6.5	22						
	23	No Data	4.5			5.5	7.5	23						
	24		4.5			6.0	8.0	24						
Card No. 04	25		5.5			6.0	8.0	25						
	26	7.5	5.0			6.0	4.5	26						
	27	6.0	4.0			6.5		27						
	28	6.0	4.0			6.0		28						
	29	6.5	5.0			—		29						
	30	6.0	5.5			-------		30						
	31	6.5	-------			-------		31	-------		-------			-------

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1990	
1	17 – 20	21 – 32

00010

[illegible] 0002

PRELIMINARY RECORD
SUBJECT TO REVISION

Remarks

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306022 - STEWART GULCH AB WEST FORK, NEAR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	TEMPER-ATURE (DEG C)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	WEATHER (WMO CODE NUMBER)	SURFACE AREA (SQ MI)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	COLOR (PLAT-INUM-COBALT UNITS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	PH (UNITS)
OCT											
25...	0945	1.0	80020	1	43	--	2	1150	9.0	--	7.7
NOV											
20...	1100	8.0	80020	1	43	1.1	2	1356	11.2	--	8.0
DEC											
05...	1015	4.0	80020	1	43	--	--	1184	11.4	7	8.0
JAN											
18...	0930	6.2	80020	1	43	--	6	1360	9.6	--	8.2
FEB											
21...	1130	8.0	80020	1	43	--	4	1350	11.4	--	8.2
APR											
04...	1000	9.5	80020	1	43	--	5	1350	10.6	--	8.2
18...	1015	--	--	--	43	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306022 - STEWART GULCH AB WEST FORK, NEAR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	ALKA-LINITY (MG/L AS CACO3)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L)	NITRO-GEN, DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMM NIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHATE, TOTAL (MG/L AS PO4)
OCT											
25...	15	390	480	0	--	--	.45	.01	.46	1.0	.09
NOV											
20...	7.8	400	490	0	--	--	.55	.06	.61	.97	.03
DEC											
05...	--	--	--	--	0	--	--	--	--	--	--
JAN											
18...	4.9	400	490	0	--	1.7	.69	.00	.69	.98	.12
FEB											
21...	4.9	402	490	0	--	.96	.11	.04	.15	.81	.09
APR											
04...	4.6	380	460	0	--	.80	.05	.00	.05	.75	.06
18...	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306022 - STEWART GULCH AB WEST FORK, NEAR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	SULFIDE TOTAL (MG/L AS S)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
OCT											
25...	.00	.03	.00	7.6	1.2	--	--	530	130	90	73
NOV											
20...	.03	.01	.01	2.2	.8	--	--	560	160	94	79
DEC											
05...	--	--	--	--	--	.00	.2	--	--	--	--
JAN											
18...	.00	.04	.00	4.1	1.2	--	--	520	120	85	75
FEB											
21...	.09	.03	.03	2.1	.6	--	--	530	130	92	72
APR											
04...	.00	.02	.00	4.3	.9	--	--	490	110	76	73
18...	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306022 - STEWART GULCH AB WEST FORK, NEAR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	SODIUM PERCENT	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SULFATE DIS- SOLVED (MG/L AS SO4)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BORON, DIS- SOLVED (UG/L AS B)
OCT											
25...	120	2.3	33	1.7	7.2	360	.3	14	1	--	110
NOV											
20...	130	2.4	34	1.5	6.8	370	.2	14	1	--	100
DEC											
05...	--	--	--	1.9	--	--	--	--	--	40	--
JAN											
18...	120	2.3	33	1.6	6.7	380	.2	16	1	--	90
FEB											
21...	130	2.5	35	1.4	6.5	370	.2	14	1	--	80
APR											
04...	130	2.6	37	1.3	6.4	370	.2	16	1	--	100
18...	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306022 - STEWART GULCH AB WEST FORK, NEAR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	ZINC, DIS-SOLVED (UG/L AS ZN)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	LITHIUM DIS-SOLVED (UG/L AS LI)
OCT											
25...	--	--	--	20	--	10	--	--	--	--	--
NOV											
20...	--	--	--	30	--	0	--	--	--	--	--
DEC											
05...	2	0	1	--	5	--	4	2600	10	10	7
JAN											
18...	--	--	--	20	--	10	--	--	--	--	--
FEB											
21...	--	--	--	20	--	0	--	--	--	--	--
APR											
04...	--	--	--	0	--	2	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306022 - STEWART GULCH AB WEST FORK, NEAR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	ODOR, ATMOS- PHERIC (SEVER- ITY)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, (COLS. PER 100 ML)	PHENOLS (UG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)
OCT											
25...	--	0	--	--	--	--	--	--	--	907	--
NOV											
20...	--	0	--	--	--	--	--	--	--	942	2.90
DEC											
05...	1	0	<4.3	<.4	.06	10	3	500	1	--	--
JAN											
18...	--	0	--	--	--	--	--	--	--	931	--
FEB											
21...	--	--	--	--	--	--	--	--	--	931	--
APR											
04...	--	0	--	--	--	--	--	--	--	903	--
18...	--	--	--	--	--	K73	K130	K25	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306022 - STEWART GULCH AB WEST FORK, NEAR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	BROMIDE DIS-SOLVED (MG/L AS BR)	MERCURY DIS-SOLVED (UG/L AS HG)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD)	DEPTH TO TOP OF SAMPLE INTER-VAL (FT)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)
OCT											
25...	1.23	.01	--	--	6430.00	--	--	--	--	--	--
NOV											
20...	1.28	.08	--	--	6430.00	--	--	--	--	--	--
DEC											
05...	--	--	.2	.3	6430.00	--	3.2	<13	<.4	<4.0	<.4
JAN											
18...	1.27	.00	--	--	6430.00	--	--	--	--	--	--
FEB											
21...	1.27	.05	--	--	6430.00	.00	--	--	--	--	--
APR											
04...	1.23	.00	--	--	6430.00	--	--	--	--	--	--
18...	--	--	--	--	6430.00	--	--	--	--	--	--

USGS WATER GAUGING STATION 09306058
Willow Creek Near Rio Blanco

A. DAILY TABLES

1. Discharge (Flow)
2. Dissolved Oxygen
3. pH
4. Specific Conductance
5. Temperature

B. WATER QUALITY DATA
PROCESS DATE 6/23/79

9-192-a. July 1937

WILLOW CK.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

NR RIO BLANCO, COLO
1977

File Number { Washington 09306058
District

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of WILLOW Creek

Near RIO BLANCO, COLORADO for the Year Ending September 30, 1977

Drainage Area 48.7 Square Miles. Water-Stage Recorder CONTINUOUS Ratio 1 : 6

Gage Read to .... Once / Twice a Day by ....

Used rating table dated NO 2 - OCT. 1 - SEPT. 2
NO 3 SEPT. 3 - 30

Gage heights used in half tenths between and feet; hundredths below and tenths above these limits.

Max. Disch. 22 Sec.-ft. at 1430 on SEPT. 3 (G. H. 4.46 ft). Max. G. H. ...... ft. at ...... on ......

Min. Daily Disch. .03 Sec.-ft. on APR. 23 (G. H. ...... ft). Min. G. H. ...... ft. on ......

S - DISCHARGE SUBDIVIDED V - VARIABLE SHIFT, DISCHARGE ESTIMATED FOR "a" NO GAGE HEIGHT RECORD "b" - ICE EFFECT.

Day	October Gage height	October Discharge	November Gage height	November Discharge	December Gage height	December Discharge	January Gage height	January Discharge	February Gage height	February Discharge	March Gage height	March Discharge
1	2.70	2.3	2.83	2.2	2.92	3.4	2.87	2.3	2.91	b 1.3	2.98	b 1.1
2	2.81	2.4	2.82	2.2	2.93	3.5	2.85	2.2	2.87	1.3	a	2.7
3	2.82	2.6	2.82	2.2	2.89	3.0	2.85	2.2	2.85	1.3	a	2.6
4	2.82	2.6	2.79	1.9	2.93	b 3.0	2.84	2.1	2.91	1.4	2.87	2.3
5	2.82	2.6	2.78	1.8	2.89	3.0	2.84	2.1	2.90	1.4	a	2.4
6	2.83	2.7	2.79	1.8	2.93	b 3.0	2.94	b 1.8	2.88	1.4	FLOAT FROZEN IN ICE IN WELL	2.4
7	2.83	2.7	2.79	1.8	2.89	3.0	3.27	1.5	2.91	1.4		2.4
8	2.83	2.7	2.78	1.7	2.89	3.0	3.37	1.5	2.92	1.4		2.4
9	2.83	2.7	2.78	1.7	2.89	3.0	3.36	1.5	2.87	1.4		2.4
10	2.83	2.7	2.79	1.8	2.90	3.1	3.59	1.0	2.93	1.4		3.2
11	2.83	2.6	2.78	1.6	2.96	b 3.1	3.85	1.2	2.92	1.4		3.5
12	2.84	2.7	2.79	1.7	3.00	3.1	3.90	1.5	2.92	1.4		2.9
13	2.84	2.7	2.79	1.7	3.02	3.0	3.78	2.0	2.86	1.4		3.1
14	2.84	2.7	2.80	1.8	2.97	2.9	3.65	2.0	2.87	1.4		2.9
15	2.85	2.9	2.79	1.7	2.95	2.9	3.30	1.9	2.89	1.4		2.9
16	2.85	2.7	2.79	1.6	3.01	2.8	2.88	1.8	2.88	1.4		2.8
17	2.85	2.7	2.77	1.5	2.93	2.9	2.87	1.7	2.86	1.4		2.8
18	2.85	2.7	2.77	1.5	3.06	2.8	2.76	1.7	2.85	1.4		.28
19	2.85	2.7	2.80	1.7	2.97	2.6	2.85	1.6	[illegible]	1.4		.20
20	2.86	2.9	2.82	1.9	3.17	2.5	2.87	1.6	2.90	1.4		.13
21	2.85	2.6	2.83	2.0	3.17	2.5	2.89	1.6	2.74	b .70		.05
22	2.84	2.5	2.83	2.0	3.21	2.4	2.88	[illegible]	2.53	.44		.05
23	2.84	2.5	2.83	2.0	3.30	2.2	[illegible]	1.6	2.57	b .45	a	.09
24	2.84	2.5	2.76	1.5	3.45	2.1	[illegible]	1.7	2.55	.50	2.40	.09
25	2.83	2.4	2.79	1.6	3.37	2.2	[illegible]	1.7	[illegible]	.47	2.46	.16
26	2.79	2.0	2.80	1.7	3.45	2.3	2.90	1.6	2.63	.50	2.43	.12
27	2.81	2.2	3.12	b 2.0	2.88	2.2	2.93	1.5	2.51	.56	2.49	b .22
28	2.86	2.6	3.07	2.6	2.86	2.1	2.91	1.4	2.71	b .60	2.51	.44
29	2.85	2.5	3.45	b 2.8	2.92	2.3	2.85	1.4	X	X	2.65	.66
30	2.84	2.4	2.91	2.7	2.95	2.2	2.77	1.3	X	X	2.70	.88
31	2.83	2.3	X	X	2.93	b 2.4	2.92	b 1.3			2.54	b .33
Total		79.80		56.70		84.5		51.9		31.92		48.49
Mean		2.57		1.89		2.73		1.67		1.14		1.56

Day	April Gage height	April Discharge	May Gage height	May Discharge	June Gage height	June Discharge	July Gage height	July Discharge	August Gage height	August Discharge	September Gage height	September Discharge
1	2.51	0.26	2.69	0.88	2.49	0.24	a	1.2	a	1.1	2.73	0.97
2	2.53	.30	2.68	.84	2.52	.30	PLUGGED INTAKES	1.0	2.76	1.1	2.73	.97
3	2.57	.40	2.66	.75	2.57	.44		1.1	2.74	1.0	S	2.6
4	2.63	.60	2.65	.70	2.58	.47		.92	2.76	1.1	2.79	1.2
5	2.68	.79	2.66	.75	2.56	.40		.75	2.78	1.2	2.77	1.1
6	2.76	1.2	2.64	.66	2.56	.40		.75	2.76	1.1	2.78	1.2
7	2.73	1.6	2.64	.66	2.56	.40		.75	2.68	.75	2.79	1.2
8	2.78	1.3	2.68	.84	2.58	.47		.75	S	.94	2.78	1.2
9	S	2.9	2.78	1.3	2.57	.44		.75	2.68	.75	2.80	1.2
10	2.83	1.6	2.71	.97	2.57	.44		.75	2.72	.92	2.80	1.2
11	2.71	.92	2.63	.63	2.58	.47	a	.92	2.73	.77	S	1.1
12	2.70	.92	2.66	.75	a	.47	2.74	1.1	2.71	.78	2.56	.47
13	S	1.0	2.65	.75	2.58	.47	2.71	.97	2.69	.79	2.53	.37
14	2.60	.53	2.57	.47	2.57	.44	a	1.2	2.73	.97	2.53	.34
15	2.43	.13	2.46	.20	2.57	.44	PLUGGED INTAKES	1.2	2.73	.97	2.52	.30
16	2.33	.03	2.47	.22	a	.63		1.2	2.74	1.0	2.52	.28
17	S	.27	2.45	.18	PLUGGED INTAKES	1.1		1.3	2.77	1.2	2.53	.28
18	S	.76	2.45	.18		1.4		1.4	2.75	1.2	2.54	.28
19	2.73	1.1	2.48	.24		1.1		1.4	2.76	1.1	2.55	.30
20	2.61	.56	2.50	.28	a	.97		.92	2.71	1.1	2.57	.31
21	2.57	.44	2.54	.37	2.74	1.2		1.1	2.77	1.2	2.59	.37
22	2.37	.07	2.50	.26	a	.97	a	1.3	2.76	1.1	S	1.4
23	2.32	.12	2.49	.24	PLUGGED INTAKES	.97	2.77	1.3	2.71	1.0	2.91	1.8
24	2.44	.14	2.52	.30		.97	2.78	1.5	2.73	.97	2.78	1.2
25	2.53	.32	2.57	.44		1.1	2.74	1.1	[illegible]	1.1	2.76	1.1
26	2.56	.40	2.52	.30		1.3	2.74	1.1	2.72	.92	2.75	1.1
27	2.59	.50	2.51	.28		1.5	2.71	1.2	2.80	1.3	2.75	1.1
28	2.63	.63	2.50	.26		1.6	a	1.3	2.73	.97	2.75	1.1
29	2.66	.75	2.49	.24		1.6	PLUGGED INTAKES	1.3	2.73	.92	2.74	1.1
30	2.66	.75	2.48	.22	a	1.4		1.3	2.72	.92	2.75	1.2
31	X	X	2.48	.22	X	X	a	1.3	2.73	.97	X	X
Total		21.19		15.38		24.10		33.93		31.51		28.39
Mean		.71		.50		.80		1.09		1.02		.95

Mean Second-feet per square mile
Run-off in inches
Run-off in acre-feet
Maximum

Calendar Year 1976	Period Year 1977
804.73	507.81
	1.39

	Quarter	First	Second	Third	Fourth
Computed		BME	BME	BME	—
Checked		—	CEK	CEK	—
Date		1-12-78			
Disch. applied		BME	BME	BME	—
Disch. checked		—	CEK	CEK	—
Date		1-12-78			
G. H. copied		BME	BME	BME	—
G. H. checked		—	CEK	CEK	—
Date		1-12-78			

PRELIMINARY RECORD SUBJECT TO REVISION

PRELIMINARY RECORD SUBJECT TO REVISION

GPO 857 887

192-a. July 1957

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of [illegible] ~~River~~ Creek

~~At~~ Near P. O. BLANCO, COLO for the Year Ending September 30, 1977

Drainage Area 45.7 Square Miles. Water-Stage Recorder CONTINUOUS Ratio 1 : 6

Max. Disch. ______ Sec.-ft. at ______ on ______ (G. H. ______ ft.). Max. G. H. ______ ft. at ______ on

Min. Disch. ______ Sec.-ft. on ______ (G. H. ______ ft.). Min. G. H. ______ ft. on

S - DISCHARGE [illegible], V - VARIABLE SHIFT. DISCHARGE ESTIMATED FOR

"a" - NO gage height record "b" - ice effect

"[illegible]" - [illegible]

Day	October		November		December		January		February		March	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1	2.77	0.95	2.78	0.93	2.79	1.22	2.67	.90				
2	2.76	0.93	2.77	.94	2.74	1.22	2.71	.94				
3	a	0.93	2.78	.99		1.21	2.72	1.04				
4		0.93	2.78	1.01	2.88	1.21	2.75	1.14				
5		0.92	[illegible]	1.01	2.85	[illegible]	2.72	1.04				
6		0.92	2.73	1.07	2.52	"b" 1.21	2.75	1.14				
7		0.91	2.73	1.12	a	1.20	"b"	1.14				
8		0.91	2.77	1.11		1.19		1.16				
9		0.90	2.77	1.14		1.18	"b"	1.18				
10		[illegible]	2.77	1.16		1.17	2.77	1.18				
11	a	0.89	2.69	.94	"a"	"b" 1.16	2.78	1.22				
12	2.75	0.89	2.78	1.18	77 2.72	105 1.16	2.77	1.18				
13	2.75	.90	2.73	1.12	2.73	1.18	2.77	1.18				
14	2.76	.91	2.76	1.26	2.73	1.18	2.77	1.18				
15	2.75	.90	73 2.75	1.27	2.71	1.11	78 2.65	±5 1.21				
16	2.75	.85	2.75		2.73	1.18						
17	2.75	.87	2.74	"b" 1.25	2.72	1.14						
18	2.74	.83	2.75	[illegible]	2.75	1.25						
19	2.75	.82	2.75	[illegible]	2.75	1.22						
20	[illegible]	.83	2.76	[illegible]	2.73	1.14						
21	2.76	.87	2.76	[illegible]	2.73	1.14						
22	2.76	.87	2.77	[illegible]	2.73	1.14						
23	2.75	.85	2.75	[illegible]	2.73	1.14						
24	2.77	.89	2.78	1.24	2.73	1.14						
25	2.76	.87	2.76	1.23	2.73	1.14						
26	2.76	.85	2.77	1.25	2.73	1.11						
27	2.75	.83	2.75	1.25	2.73	1.11						
28	2.75	.83	2.80	1.25	2.73	1.11						
29	2.75	.82	2.80	[illegible]	2.73	1.11						
30	2.76	.84	2.78	[illegible]	2.73	1.11						
31	75 2.78	.90			2.70	1.00						
Total												
Mean		.88				1.16						
Second-feet per square mile												
Run-off in inches												
Run-off in acre-feet												

Calendar Year

PRELIMINARY DATA SUBJECT TO REVISION

PRELIMINARY DATA SUBJECT TO REVISION

D.O. (mg/l)
max

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306058 Willow Cr.   Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	NO RCD		10.				1							1
	2			99999				2							2
	3							3							3
	4	6.0						4							4
	5	6.0						5							5
	6	5.9						6							6
	7	5.7	99999					7							7
	8	5.6	BAD					8							8
Card No. 02	9		PROBE					9							9
	10	NO RECORD						10							10
	11							11							11
	12							12							12
	13							13							13
	14							14							14
	15							15							15
	16							16							16
Card No. 03	17		9.6					17							17
	18		9.7					18							18
	19		6.6					19							19
	20		9.0					20							20
	21		8.7	LINES				21							21
	22		11.5	FROZEN				22							22
	23		10.9					23							23
	24		10.7					24							24
Card No. 04	25		10.7					25							25
	26	6.2	10.3					26							26
	27	6.3	10.4					27							27
	28	6.1	10.6					28							28
	29	5.8	10.7					29							29
	30	5.9	10.2			-------		30							30
	31	5.9	-------			-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

Par Code 00300

Stat Code 00001

Remarks

D.O. (mg/l)
min

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306058 Willow Cr. Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	[illegible]		10.0				1							1
	2			999999				2							2
	3							3							3
	4	4.2	BAD					4							4
	5	4.1	PROBE					5							5
	6	3.9	999999					6							6
	7	3.7						7							7
	8	3.8						8							8
Card No. 02	9	NO DATA						9							9
	10							10							10
	11							11							11
	12							12							12
	13							13							13
	14							14							14
	15			LINES				15							15
	16			FROZEN				16							16
Card No. 03	17		9.2					17							17
	18		5.9					18							18
	19		7.1					19							19
	20		4.6					20							20
	21		8.2					21							21
	22		5.3					22							22
	23		10.1					23							23
	24		9.9					24							24
Card No. 04	25		9.9					25							25
	26	5.0	7.5					26							26
	27	5.0	6.2					27							27
	28	4.6	9.6					28							28
	29	4.5	9.7					29							29
	30	4.5	6.4			--------		30							30
	31	4.4	--------			--------		31	--------		--------			--------	31

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

Par Code 00300

Stat Code 00002

PRELIMINARY DATA SUBJECT TO REVISION

Remarks

D.O. (mg/l)
mean

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306053 Willow Cr.   Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1		↑	10.2				1							1
	2			999999				2							2
	3							3							3
	4	5.1						4							4
	5	5.0	999999					5							5
	6	5.0	BAD					6							6
	7	4.7	PROBE					7							7
	8	4.6						8							8
Card No. 02	9							9							9
	10							10							10
	11							11							11
	12							12							12
	13	NO DATA						13							13
	14							14							14
	15							15							15
	16		↓					16							16
Card No. 03	17		9.3					17							17
	18		8.2					18							18
	19		5.6					19							19
	20		6.8					20							20
	21		7.4					21							21
	22		8.9					22							22
	23		10.5					23							23
	24	↑	10.3					24							24
Card No. 04	25	↓	8.6					25							25
	26	5.4	9.2					26							26
	27	5.5	8.3					27							27
	28	5.3	10.2					28							28
	29	5.1	10.0					29							29
	30	5.2	9.8			-------		30							30
	31	5.6	-------			-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type T (1)

Water year 1979 (17–20)

Total value (sum of daily value entries) (21–32)

Par Code 00300

Stat Code 00003

PRELIMINARY DATA SUBJECT TO REVISION

Remarks

pH max

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306058 Willow Cr. Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	No RCD	8.1	8.2				1							1
	2		8.1					2							2
	3		8.0					3							3
	4	8.2	8.1					4							4
	5	8.2	8.0					5							5
	6	8.2	8.0					6							6
	7	8.1	8.0					7							7
	8	8.1	8.1					8							8
Card No. 02	9	8.1	8.1					9							9
	10	8.1	8.1					10							10
	11	8.1	8.2					11							11
	12	8.1	999999					12							12
	13	8.1	8.1					13							13
	14	8.1	8.1					14							14
	15	8.0	8.0					15							15
	16	8.0	8.3					16							16
Card No. 03	17	8.1	8.3					17							17
	18	8.0	8.4	LINES FROZEN				18							18
	19	8.0	8.2					19							19
	20	8.0	8.3					20							20
	21	8.1	8.2					21							21
	22	8.0	8.1					22							22
	23	8.0	8.2					23							23
	24		8.2					24							24
Card No. 04	25		8.2					25							25
	26	8.1	8.2					26							26
	27	8.2	8.2					27							27
	28	8.2	8.2					28							28
	29	8.2	8.2					29							29
	30	8.1	8.2			-------		30							30
	31	8.1	-------			-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

Par Code 00400

Stat Code 00001

PRELIMINARY DATA SUBJECT TO REVISION

Remarks

pH
min

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306058 Willow Cr.

Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	[illegible]	8.0	8.1				1							1
	2		7.9	↑				2							2
	3		7.9					3							3
	4	8.0	7.9					4							4
	5	7.9	[illegible]	FROZEN				5							5
	6	8.0	[illegible]	LINES				6							6
	7	7.9	[illegible]					7							7
	8	7.9	7.9					8							8
Card No. 02	9	7.9	8.0					9							9
	10	7.9	8.0					10							10
	11	7.9	8.1					11							11
	12	7.9	999999					12							12
	13	7.9	8.0					13							13
	14	7.9	8.0					14							14
	15	7.9	8.0					15							15
	16	7.9	8.3					16							16
Card No. 03	17	7.8	8.3					17							17
	18	7.9	8.3					18							18
	19	7.9	8.1					19							19
	20	7.9	8.1					20							20
	21	7.9	8.1					21							21
	22	7.9	8.1					22							22
	23	7.9	8.2					23							23
	24	↑	8.1					24							24
Card No. 04	25	↓	8.1					25							25
	26	8.0	8.1					26							26
	27	8.0	8.2					27							27
	28	8.0	8.1					28							28
	29	8.0	8.2					29							29
	30	8.0	8.1			-------		30							30
	31	8.0	-------	↓		-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

Par Code [illegible]

Stat Code [illegible]

PRELIMINARY DATA SUBJECT TO REVISION

Remarks

pH
mean

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306058 Willow Cr.

Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	ICED	8.1	8.1				1							1
	2		8.0					2							2
	3		8.0					3							3
	4	8.1	8.0					4							4
	5	8.1	8.0					5							5
	6	8.1	8.0					6							6
	7	8.1	8.0					7							7
	8	8.1	8.0					8							8
Card No. 02	9	8.1	8.0					9							9
	10	8.1	8.0					10							10
	11	8.1	8.0					11							11
	12	8.0	[illegible]					12							12
	13	8.0	8.0					13							13
	14	8.0	8.0					14							14
	15	8.0	8.0					15							15
	16	8.0	[illegible]					16							16
Card No. 03	17	8.0	8.2					17							17
	18	8.0	8.3					18							18
	19	8.0	8.2					19							19
	20	7.7	5.2					20							20
	21	8.0	8.1					21							21
	22	8.0	8.3					22							22
	23	8.0	8.2					23							23
	24		8.2					24							24
Card No. 04	25		8.2					25							25
	26	8.1	8.2					26							26
	27	81	8.2					27							27
	28	8.1	8.2					28							28
	29	8.1	8.2					29							29
	30	8.1	8.2			-------		30							30
	31	8.1	-------			-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 – 20	21 – 32

Par Code 00400

Stat Code 00003

PRELIMINARY DATA SUBJECT TO REVISION

Remarks

GPO : 1971 O - 412-477

COND MAX (μmhos)

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306058 Willow Cr.

Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	[illegible]	1240	1240	↑			1							1
	2		1250	999999				2							2
	3		1270	↑				3							3
	4	1348	1250					4							4
	5	1346	1240					5							5
	6	1356	1250					6							6
	7	1358	1270					7							7
	8	1362	1260					8							8
Card No. 02	9	1362	1270					9							9
	10	1360	1240					10							10
	11	1350	1270					11							11
	12	1350	999999					12							12
	13	1360	1230					13							13
	14	1358	1270					14							14
	15	1360	1280					15							15
	16	1354	1270					16							16
Card No. 03	17	1356	1310	FROZEN				17							17
	18	1358	1400	[illegible]	↓			18							18
	19	1350	1390					19							19
	20	1376	1400					20							20
	21	1374	1410					21							21
	22	1354	1360					22							22
	23	1354	1360					23							23
	24	↑	1390					24							24
Card No. 04	25	↓	1290					25							25
	26	1280	1290					26							26
	27	1250	1360					27							27
	28	1250	1430					28							28
	29	1270	1310					29							29
	30	1270	1280			-------		30							30
	31	1240	-------	↓		-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

Par Code 00095

Stat. Code 00001

Remarks

COND
min (μ mhos)

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306058 Willow Cr.

Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1		1210	1070				1							1
	2		1200	999999				2							2
	3		1200					3							3
	4	1284	1210					4							4
	5	1284	1200					5							5
	6	1288	1200					6							6
	7	1276	1180					7							7
	8	1288	1210					8							8
Card No. 02	9	1288	1210					9							9
	10	1294	1180					10							10
	11	1302	1170					11							11
	12	1298	999999					12							12
	13	1310	1190					13							13
	14	1310	1220					14							14
	15	1312	1180					15							15
	16	1306	1136					16							16
Card No. 03	17	1306	1200					17							17
	18	1316	1260					18							18
	19	1320	1250	LINES				19							19
	20	1336	1240	FROZEN				20							20
	21	1314	1300.					21							21
	22	1312	1250					22							22
	23	1318	1230					23							23
	24		1240					24							24
Card No. 04	25		1210					25							25
	26	1200	1200					26							26
	27	1210	1220					27							27
	28	1210	1180					28							28
	29	1220	1200					29							29
	30	1210	1230			-------		30							30
	31	1210	-------			-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type T (1)

Water year 1979 (17–20)

Total value (sum of daily value entries) (21–32)

Par Code 00095

Stat Code 00003

PRELIMINARY DATA SUBJECT TO REVISION

Remarks

COND (µ mhos)

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306053 Willow Cr. Water year 1979

PRELIMINARY DATA SUBJECT TO REVISION

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1		1220	1200				1							1
	2		1220	999999				2							2
	3		1230					3							3
	4	1322	1230					4							4
	5	1326	1230					5							5
	6	1327	1230					6							6
	7	1329	1230					7							7
	8	1330	1230					8							8
Card No. 02	9	1332	1230	LINES				9							9
	10	1333	1220	FROZEN				10							10
	11	1330	1210					11							11
	12	1328	999999					12							12
	13	1334	[illegible]					13							13
	14	[illegible]	[illegible]					14							14
	15	1337	1200					15							15
	16	1339	1230					16							16
Card No. 03	17	1336	1270					17							17
	18	1338	1250					18							18
	19	1336	1330					19							19
	20	1356	1330					20							20
	21	1350	1370					21							21
	22	1336	1240					22							22
	23	1338	1300					23							23
	24		1310					24							24
Card No. 04	25		1260					25							25
	26	1230	1260					26							26
	27	1230	1300					27							27
	28	1230	1330					28							28
	29	1240	1270					29							29
	30	1230	1260			-------		30							30
	31	1230	-------			-------		31	-------		-------			-------	31

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

Par Code [illegible]

Stat Code 00003

PRELIMINARY DATA SUBJECT TO REVISION

Remarks

Temp (Deg F)
Max

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306058 Willow Cr.   Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	No Rcd	9.5	3.5				1							1
	2		12.0	No DATA				2							2
	3		11.0					3							3
	4	14.0	9.5					4							4
	5	14.1	9.6					5							5
	6	12.7	7.5					6							6
	7	14.3	8.0					7							7
	8	14.5	9.0					8							8
Card No. 02	9	14.7	9.5					9							9
	10	14.7	5.0					10							10
	11	11.8	1.5					11							11
	12	12.5	999999					12							12
	13	13.0	3.0					13							13
	14	11.6	3.5					14							14
	15	10.2	3.0					15							15
	16	12.3	4.5					16							16
Card No. 03	17	13.4	3.5					17							17
	18	8.8	3.0					18							18
	19	9.6	8.5	EXHAUST LINE FROZEN				19							19
	20	8.1	4.5					20							20
	21	10.3						21							21
	22	8.9	5.5					22							22
	23	6.6	4.0					23							23
	24	NO DATA	2.5					24							24
Card No. 04	25		4.5					25							25
	26	8.5	4.0					26							26
	27	9.5	4.5					27							27
	28	10.0	1.0					28							28
	29	10.0	2.5					29							29
	30	7.5	4.5			-------		30							30
	31	9.5	-------			-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

Par Code 00010

Stat Code 00001

PRELIMINARY DATA SUBJECT TO REVISION

Remarks

TEMP (DEg F)
MIN

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306058 Willow Cr. Water year 1977

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	0.0	1.5	0	↑			1							1
	2		2.5	↑				2							2
	3		3.5	FROZEN				3							3
	4	1.5	1.0	LINES				4							4
	5	2.7	2.5					5							5
	6	2.8	0					6							6
	7	3.1	0					7							7
	8	2.9	0.5					8							8
Card No. 02	9	3.4	1.0					9							9
	10	3.5	0					10							10
	11	1.7	0					11							11
	12	1.0	99999					12							12
	13	1.4	1.5					13							13
	14	1.8	0.5					14							14
	15	3.1	1.0					15							15
	16	6.9	0.5					16							16
Card No. 03	17	2.4	0.0					17							17
	18	3.5	0.0					18							18
	19	7.1	1.5					19							19
	20	5.9	0.5					20							20
	21	1.0	0					21							21
	22	1.6	0.5					22							22
	23	4.5	0.0					23							23
	24	↑	0					24							24
Card No. 04	25	↓	0					25							25
	26	3.3	0					26							26
	27	0	0					27							27
	28	0.5	0					28							28
	29	1.0	0					29							29
	30	2.0	1.0			-------		30							30
	31	1.0	-------	↓		-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type T (1) Water year 1977 (17–20) Total value (sum of daily value entries) (21–32)

Par Code 00010

Stat Code 00002

PRELIMINARY DATA SUBJECT TO REVISION

Remarks

TEMP (DEG F)
MEAN

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306058 Willow Cr. Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	[illegible]	5.0	2.0				1							1
	2		6.5					2							2
	3		6.5					3							3
	4	6.5	5.0					4							4
	5	7.0	5.5					5							5
	6	7.0	3.0					6							6
	7	8.0	3.5					7							7
	8	8.0	4.0					8							8
Card No. 02	9	8.0	5.0					9							9
	10	8.0	3.0					10							10
	11	6.5	0.5	LINES				11							11
	12	6.0	999999	FROZEN				12							12
	13	6.0	2.0					13							13
	14	6.0	2.0					14							14
	15	6.5	2.0					15							15
	16	8.5	2.0					16							16
Card No. 03	17	7.0	1.0					17							17
	18	6.5	1.0					18							18
	19	8.0	4.0					19							19
	20	7.0	2.5					20							20
	21	4.5	0.5					21							21
	22	5.0	2.5					22							22
	23	6.0	1.0					23							23
	24		0.5					24							24
Card No. 04	25		0.5					25							25
	26	6.0	2.0					26							26
	27	4.0	1.5					27							27
	28	4.5	0					28							28
	29	5.0	1.5					29							29
	30	4.5	2.5			-------		30							30
	31	4.5	-------			-------		31	-------		-------			-------	31

PRELIMINARY DATA SUBJECT TO REVISION

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

PRELIMINARY DATA SUBJECT TO REVISION

PRELIMINARY DATA SUBJECT TO REVISION

Par Code 00010

Stat Code 00003

Remarks

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306058 - WILLOW CREEK NEAR RIO BLANCO, CO.

PROCESS DATE 06/23/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	TEMPERATURE (DEG C)	AGENCY ANALYZING SAMPLE (CODE NUMBER)	WEATHER (WMO CODE NUMBER)	SURFACE AREA (SQ MI)	STREAMFLOW, INSTANTANEOUS (CFS)	COLOR (PLATINUM-COBALT UNITS)	SPECIFIC CONDUCTANCE (MICROMHOS)	OXYGEN, DISSOLVED (MG/L)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	PH (UNITS)
OCT 25...	1245	6.5	80020	1	48	--	2	1400	6.4	--	8.0
NOV 15...	1100	1.0	80020	1	48	1.3	7	1320	11.2	--	8.5
DEC 05...	1300	.0	80020	--	48	--	--	1050	9.4	8	7.8
JAN 18...	1330	3.0	80020	1	48	--	7	1300	10.6	--	8.0
FEB 21...	1330	5.0	80020	1	48	--	4	1200	9.0	--	8.4
APR 04...	1305	11.0	80020	1	48	--	20	1400	9.2	--	8.4

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306058 - WILLOW CREEK NEAR RIO BLANCO, CO.

PROCESS DATE 06/23/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	ALKA-LINITY (MG/L AS CACO3)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)
OCT											
25...	7.8	400	490	0	--	.51	--	.31	.54	.00	.08
NOV											
15...	2.5	410	500	0	--	.36	--	.20	.21	.02	.04
DEC											
05...	.0	--	1	--	0	--	--	--	--	--	--
JAN											
18...	8.0	410	500	0	--	.85	.78	.63	.54	.00	.00
FEB											
21...	2.9	380	380	39	--	.73	.64	.51	.35	.12	.07
APR											
04...	3.0	390	470	0	--	.28	.12	.20	.05	.00	.01

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306058 - WILLOW CREEK NEAR RIO BLANCO, CO.

PROCESS DATE 06/23/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHATE, TOTAL (MG/L AS PO4)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)
OCT											
25...	.01	.11	.54	.39	.12	.14	.12	.03	.04	.01	5.3
NOV											
15...	.01	.11	.23	.24	.12	.13	.03	.03	.01	.01	8.7
DEC											
05...	--	--	--	--	--	--	--	--	--	--	--
JAN											
18...	.02	.20	.54	.63	.22	.24	.28	.00	.09	.00	6.0
FEB											
21...	.02	.13	.47	.58	.15	.17	.28	.06	.09	.02	5.8
APR											
04...	.02	.05	.05	.21	.07	.07	.12	.00	.04	.00	7.0

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306058 - WILLOW CREEK NEAR RIO BLANCO, CO.

PROCESS DATE 06/23/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	SULFIDE TOTAL (MG/L AS S)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	SODIUM PERCENT	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
OCT											
25...	1.1	--	--	510	110	84	73	120	2.3	34	2.0
NOV											
15...	--	--	--	560	150	99	76	120	2.2	32	1.8
DEC											
05...	--	.00	.0	--	--	--	--	--	--	--	2.5
JAN											
18...	1.2	--	--	510	100	86	72	110	2.1	32	1.7
FEB											
21...	1.3	--	--	520	140	91	70	120	2.3	34	1.8
APR											
04...	2.3	--	--	500	120	84	71	130	2.5	36	1.6

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306058 - WILLOW CREEK NEAR RIO BLANCO, CO.

PROCESS DATE 06/23/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CHLORIDE, DIS-SOLVED (MG/L AS CL)	SULFATE DIS-SOLVED (MG/L AS SO4)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BORON, DIS-SOLVED (UG/L AS B)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHROMIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT											
25...	14	350	.4	16	0	--	130	--	--	--	10
NOV											
15...	10	420	.3	15	1	--	140	--	--	--	30
DEC											
05...	--	--	--	--	--	60	--	<1	10	5	--
JAN											
18...	14	330	.4	16	1	--	110	--	--	--	10
FEB											
21...	11	340	.3	15	1	--	110	--	--	--	20
APR											
04...	.0	360	.4	15	1	--	120	--	--	--	40

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306058 - WILLOW CREEK NEAR RIO BLANCO, CO.

PROCESS DATE 06/23/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	ZINC, DIS-SOLVED (UG/L AS ZN)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	LITHIUM DIS-SOLVED (UG/L AS LI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	ODOR, ATMOS-PHERIC (SEVER-ITY)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)
OCT 25...	--	0	--	--	--	--	--	--	0	--
NOV 15...	--	0	--	--	--	--	--	--	0	--
DEC 05...	8	--	2	2900	60	20	10	1	0	<2.6
JAN 18...	--	9	--	--	--	--	--	--	0	--
FEB 21...	--	0	--	--	--	--	--	--	0	--
APR 04...	--	10	--	--	--	--	--	--	0	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306058 - WILLOW CREEK NEAR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML)	PHENOLS (UG/L)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	PHOS-PHORUS, ORTHO. TOTAL (MG/L AS P)
OCT										
25...	--	--	--	--	--	.00	902	--	1.23	.04
NOV										
15...	--	--	--	--	--	.10	989	3.47	1.35	.01
DEC										
05...	.8	.04	K12	400	0	--	--	--	--	--
JAN										
18...	--	--	--	--	--	.00	878	--	1.19	.01
FEB										
21...	--	--	--	--	--	.00	877	--	1.19	.02
APR										
04...	--	--	--	--	--	.00	894	--	1.22	.01

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306058 - WILLOW CREEK NEAR RIO BLANCO, CO.

PROCESS DATE 06/23/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4)	BROMIDE DISSOLVED (MG/L AS BR)	NITROGEN, TOTAL (MG/L AS NO3)	MERCURY DISSOLVED (UG/L AS HG)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD)	URANIUM DISSOLVED, EXTRACTION (UG/L)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)
OCT										
25...	.00	--	2.3	--	6273.00	--	--	--	--	--
NOV										
15...	.03	--	1.6	--	6273.00	--	--	--	--	--
DEC										
05...	--	.2	--	.1	6273.00	2.3	<8.5	.9	<2.3	.7
JAN										
18...	.00	--	3.8	--	6273.00	--	--	--	--	--
FEB										
21...	.15	--	3.2	--	6273.00	--	--	--	--	--
APR										
04...	.00	--	1.2	--	6273.00	--	--	--	--	--

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USGS WATER GAUGING STATION 09306061
Piceance Creek Above Hunter Creek

A. DAILY TABLES

1. Discharge (Flow)
2. Dissolved Oxygen
3. pH
4. Specific Conductance
5. Temperature

B. WATER QUALITY DATA
PROCESS DATE 6/23/79

9-102-a Jan 19

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of [illegible] River / Creek

At / Near [illegible] for the Year Ending September 30, 19 [illegible]

Drainage Area [illegible] Square Miles. Water-Stage Recorder [illegible] Ratio 1 :

Max. Disch. Sec.-ft. at on (G. H. ft.). Max. G. H. ft. at on

Min. Disch. Sec.-ft. on (G. H. ft.). Min. G. H. ft. on

S- DISCHARGE [illegible], V- VARIABLE [illegible] SHIFT, DISCHARGE [illegible]
[illegible] "a"- NO GAGE HEIGHT [illegible], "b"- ICE [illegible]

CALENDAR YEAR

Day	October Gage height	October Discharge	November Gage height	November Discharge	December Gage height	December Discharge	January Gage height	January Discharge	February Gage height	February Discharge	March Gage height	March Discharge
1	1.22	4.0	[illegible]	[illegible]	1.43	16	a	17	a	14		
2	1.36	3.4	[illegible]	[illegible]	1.47	16	↑	17	a	14		
3	1.14	.63	1.30	[illegible]	1.67	b 16		17	a	13		
4	.15	.73	[illegible]	6.6	1.44	15		17	1.75	b 13		
5	.12	1.4	[illegible]	6.9	1.43	15		17	1.65	12		
6	[illegible]	[illegible]	.42	[illegible]	1.52	b 15		17	2.00	↓ 12		
7	[illegible]	[illegible]	[illegible]	13.	1.75	b 16		17	1.83	b 12		
8	[illegible]	3.0	1.43	14	a	17		17	1.33	b 11		
9	[illegible]	[illegible]	[illegible]	17	1.46	17		17	1.23	b 11		
10	[illegible]	[illegible]	[illegible]	16.	1.42	15	a	7	1.23	b 11		
11	[illegible]	[illegible]	1.27	16.	1.40	14	1.20	17	1.19	11		
12	1.33	4.0	[illegible]	20	1.46	17.	1.19	16	1.19	11		
13	1.29	5.2	[illegible]	21	75 1.75	.05 17	1.19	16	1.19	12		
14	1.27	[illegible]	74 [illegible]	20	1.58	b 17	1.61	b 16	1.21	12		
15	[illegible]	[illegible]	1.56	19	1.52	↑ 16	70 1.20	17	1.21	12		
16	[illegible]	[illegible]	1.55	19	1.71	↓ 16	1.17	15	1.22	13		
17	[illegible]	[illegible]	1.52	17	[illegible]	b 15	1.19	16	[illegible]	13		
18	[illegible]	[illegible]	1.51	17	1.34	14	1.13	15	[illegible]	b 13		
19	1.25	[illegible]	1.51	17	[illegible]	12	1.19	15	1.22	13		
20	[illegible]	[illegible]	1.51	17	1.27	12.	1.20	16	1.22	13		
21	[illegible]	[illegible]	1.51	17	1.33	b 13	1.41	b 16				
22	[illegible]	[illegible]	1.51	16	1.45	b 13	1.22	17				
23	[illegible]	[illegible]	1.52	15	1.26	14	[illegible]	b 7				
24	[illegible]	[illegible]	1.51	17	[illegible]	15	[illegible]	b 17				
25	[illegible]	[illegible]	1.51	17	1.35	b 15	[illegible]	b 17				
26	[illegible]	[illegible]	1.51	18	[illegible]	↕ 16	1.37	b 16				
27	[illegible]	4.6	1.50	17	[illegible]	b 17	a	[illegible]				
28	[illegible]	[illegible]	1.53	b 17	[illegible]	[illegible]	a	16				
29	[illegible]	4.6	1.47	17	1.31	b 17	a	15				
30	[illegible]	[illegible]	1.47	16	1.38	b 17	a	15				
31	[illegible]	[illegible]			1.73	b 17	a	15				
Total												
Mean		3.75		15.23		15.45		16.32				
Second-feet per square mile												
Run-off in inches												
Run-off in acre-feet												
Maximum												
Minimum												

Note / Most d[illegible] were [illegible]

PRELIMINARY RECORD SUBJECT TO REVISION

PRELIMINARY RECORD SUBJECT TO REVISION

II A-84

Coding Form for Input and Update of Daily Values--Continued

DO (mg/l)
MAX

Station identification number 09306061 Piceance Cr. at Hunter Cr. Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	10.1					10.7	1							1
	2	10.0					10.4	2							2
	3	10.4					10.2	3							3
	4	10.2					10.4	4							4
	5	10.3					10.4	5							5
	6	10.0	NO DATA	NO DATA			10.4	6							6
	7	10.0						7							7
	8	9.7					10.8	8							8
Card No. 02	9	9.2					11.0	9							9
	10	8.9					11.0	10							10
	11	9.1			FROZEN		11.1	11							11
	12	8.8			LINES		11.0	12							12
	13	8.6				PROBE	10.9	13							13
	14	8.3	8.9			NPLF	10.8	14							14
	15	8.6	9.2				10.0	15							15
	16	8.6	9.4				10.7	16							16
Card No. 03	17	8.5	9.6					17							17
	18	8.7	9.7					18							18
	19	8.6	9.7					19							19
	20	9.1	9.8					20							20
	21	6.7	9.7			10.0		21							21
	22		9.5			10.6		22							22
	23		9.8			10.7		23							23
	24		9.9			10.9		24							24
Card No. 04	25		9.7			10.9		25							25
	26		9.8			10.7		26							26
	27		9.9			10.2		27							27
	28		10.0			11.1		28							28
	29		9.8			—		29							29
	30		9.5			-------		30							30
	31		-------			-------		31	-------		-------			-------	31

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

Parm Code 00300
Stat Code 00001

PRELIMINARY DATA SUBJECT TO REVISION

Remarks

GPO : 1971 O - 442-477

DO (mg/l)

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306061 Piceance Cr. at Hunter Cr. Water year

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	5.4					8.8	1							1
	2	5.4					8.2	2							2
	3	5.6					8.2	3							3
	4	5.1					8.8	4							4
	5	5.5		NO DATA			8.8	5							5
	6	5.2					8.6	6							6
	7	5.0						7							7
	8	4.8	NO DATA				9.0	8							8
Card No. 02	9	4.8					8.6	9							9
	10	4.8					8.0	10							10
	11	4.8					8.3	11							11
	12	5.5					8.0	12							12
	13	5.0				NO DATA	8.5	13							13
	14	5.0	8.1				8.1	14							14
	15	5.1	8.5		NO DATA		8.6	15							15
	16	5.1	8.5				8.0	16							16
Card No. 03	17	4.9	8.6					17							17
	18	4.9	8.7					18							18
	19	4.9	8.4					19							19
	20	4.8	8.3			✓		20							20
	21	4.8	8.4			9.6		21							21
	22		8.3	LINES		10.0		22							22
	23		8.5	FROZEN		9.3		23							23
	24		8.7			9.4		24							24
Card No. 04	25		8.4			9.4		25							25
	26		8.6			9.6		26							26
	27		8.7			9.8		27							27
	28		8.9			9.0		28							28
	29		8.6					29							29
	30		8.2			-------		30							30
	31		-------		✓	-------		31	-------		-------			-------	31

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

Par Code 00300

Stat Code 00003

Remarks

PRELIMINARY DATA SUBJECT TO REVISION

GPO : 1971 O - 412-477

(mg/l)

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306061 Piceance Cr. at Hunter Cr.   Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	7.2					9.7	1							1
	2	7.5					9.3	2							2
	3	7.4					9.2	3							3
	4	7.3					9.6	4							4
	5	7.1					9.4	5							5
	6	7.0		NO DATA			9.3	6							6
	7	6.7	NO DATA					7							7
	8	6.5					9.9	8							8
Card No. 02	9	6.3					9.8	9							9
	10	6.1				NO DATA	9.7	10							10
	11	6.2					9.6	11							11
	12	5.9					9.5	12							12
	13	6.2					9.5	13							13
	14	6.2	8.5				9.3	14							14
	15	6.2	8.7				9.5	15							15
	16	6.5	8.8				9.6	16							16
Card No. 03	17	6.1	9.0					17							17
	18	5.8	9.1		NO DATA			18							18
	19	5.9	9.1					19							19
	20	5.5	9.0	FROZEN				20							20
	21	5.3	9.0	LINES		9.7		21							21
	22		8.9			10.4		22							22
	23		9.1			10.4		23							23
	24		9.2			10.2		24							24
Card No. 04	25		8.9			10.4		25							25
	26		9.0			10.3		26							26
	27		9.2			9.9		27							27
	28		9.1			10.0		28							28
	29		9.1			——		29							29
	30		9.0			-------		30							30
	31		-------			-------		31	-------		-------			-------	31

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

Parm Code 00300

Stat Code 00003

Remarks

PRELIMINARY DATA SUBJECT TO REVISION

GPO : 1971 O - 442-477

pH max

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306061 Piceance Cr. at Hunter Cr. Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	8.3					8.6	1							1
	2	8.3					8.6	2							2
	3	8.3					8.5	3							3
	4	8.2					8.6	4							4
	5	8.2					8.5	5							5
	6	8.2					8.6	6							6
	7	8.2		NO DATA				7							7
	8	8.2				PUMP MALF	8.6	8							8
Card No. 02	9	8.1					8.6	9							9
	10	8.1					8.5	10							10
	11	8.1	no data				8.5	11							11
	12	8.1					8.5	12							12
	13	8.1					8.5	13							13
	14	8.1	2.4				8.5	14							14
	15	8.1	8.3				8.5	15							15
	16	8.1	8.4					16							16
Card No. 03	17	8.1	8.4					17							17
	18	8.1	8.4					18							18
	19	8.1	8.4					19							19
	20	8.1	8.4					20							20
	21	8.0	8.4			8.5		21							21
	22	8.0	8.4			8.5		22							22
	23	8.1	8.4			8.5		23							23
	24	8.1	8.4			8.5		24							24
Card No. 04	25	.1	8.4			8.5		25							25
	26		8.4			8.5		26							26
	27		8.4			8.5		27							27
	28		8.4			8.5		28							28
	29		8.4					29							29
	30		8.4			-------		30							30
	31		-------			-------		31	-------		-------			-------	31

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

Par Code 00400

Stat Code 00001

Remarks

PROVISIONAL DATA SUBJECT TO REVISION

pH min

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306061 Piceance Cr. at Hunter Cr. Water year [illegible]

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	8.1					8.5	1							1
	2	8.1					8.5	2							2
	3	8.1					8.5	3							3
	4	8.1					8.5	4							4
	5	8.1					8.4	5							5
	6	8.0		NO DATA			8.4	6							6
	7	8.0						7							7
	8	8.0					8.0	8							8
Card No. 02	9	8.0					8.4	9							9
	10	7.9					8.4	10							10
	11	7.9	no data				8.4	11							11
	12	8.0					8.4	12							12
	13	8.0	↓	*	NO DATA	NO DATA	8.4	13							13
	14	8.0	8.3				8.4	14							14
	15	8.0	8.3				8.4	15							15
	16	8.0	8.3					16							16
Card No. 03	17	8.0	8.3					17							17
	18	7.9	8.3					18							18
	19	8.0	8.3					19							19
	20	8.0	8.3			↓		20							20
	21	7.9	8.3			8.5		21							21
	22	7.9	8.3			8.5		22							22
	23	7.9	8.3			8.5		23							23
	24	8.0	8.3			8.5		24							24
Card No. 04	25	8.1	8.3			8.5		25							25
	26	↑	8.4			8.5		26							26
	27		8.4			8.5		27							27
	28		8.4			8.5		28							28
	29		8.4					29							29
	30		8.4			-------		30							30
	31		-------	↓	↓	-------		31	-------		-------			-------	31

TOTAL CHECK CARD

Type: T (1)

Water year: 1978 (17–20)

Total value (sum of daily value entries): (21–32)

Par code 00400

Stat code [illegible]

PRELIMINARY DATA SUBJECT TO REVISION

Remarks

pH mean

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306061 Piceance Cr. at Hunter Cr. Water year [illegible]

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	8.2	↑	↑	↑		8.5	1							1
	2	8.2					8.5	2							2
	3	8.2					8.5	3							3
	4	8.1					8.5	4							4
	5	8.1					8.5	5							5
	6	8.1	NO DATA	NO DATA			8.5	6							6
	7	8.1						7							7
	8	8.0					8.5	8							8
Card No. 02	9	8.0					8.4	9							9
	10	8.0					8.5	10							10
	11	8.0					8.5	11							11
	12	8.1					8.5	12							12
	13	8.0	↓	↓		NO DATA	8.5	13							13
	14	8.0	8.3		NO DATA		8.4	14							14
	15	8.0	8.3				8.4	15							15
	16	8.0	8.3					16							16
Card No. 03	17	8.0	8.3					17							17
	18	8.0	8.3					18							18
	19	8.0	8.3					19							19
	20	8.0	8.3			↓		20							20
	21	8.0	8.4			8.5		21							21
	22	8.0	8.4			8.5		22							22
	23	8.0	8.4			8.5		23							23
	24	[illegible]	8.4			8.5		24							24
Card No. 04	25	[illegible]	8.4			8.5		25							25
	26	↑	8.4			8.5		26							26
	27		8.4			8.5		27							27
	28		8.4			8.5		28							28
	29		8.4					29							29
	30		8.4			-------		30							30
	31		-------	↓	↓	-------		31	-------		-------			-------	31

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

Par Code 00400

Stat Code 00003

Remarks

PRELIMINARY DATA SUBJECT TO REVISION

GPO 1971 O - 412-177

COND (µmhos)
MAX

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306061 Piceance Cr. at Hunter Cr. Water year 1978

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	1418					1284	1							1
	2	1410					1278	2							2
	3	1478					1276	3							3
	4	1486					1282	4							4
	5	1484					1298	5							5
	6	1506		NO DATA			1292	6							6
	7	1526	NO DATA					7							7
	8	1538					1284	8							8
Card No. 02	9	1536					1294	9							9
	10	[illegible]					1300	10							10
	11	1592					1302	11							11
	12	1592					1278	12							12
	13	1584					1284	13							13
	14	1536	1270			NO DATA	1266	14							14
	15	1544	1290				1246	15							15
	16	1530	1290				1252	16							16
Card No. 03	17	[illegible]	1290					17							17
	18	1560	1290					18							18
	19	1612	1280		NO DATA			19							19
	20	1636	1260					20							20
	21	1616	1280			1284		21							21
	22	1592	1280			1276		22							22
	23	1572	1270	LINES		1312		23							23
	24	1552	1270	FROZEN		1272		24							24
Card No. 04	25	1540	1260			1318		25							25
	26		1260			1278		26							26
	27		1250			1274		27							27
	28		1280			1284		28							28
	29		1250					29							29
	30		1260			-------		30							30
	31		-------			-------		31	-------		-------			-------	31

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1978	
1	17 — 20	21 — 32

Par Code 00095
Stat Code 00001

Remarks

PROVISIONAL DATA SUBJECT TO REVISION

GPO : 1971 O - 442 477

(μmhos)

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306061 Piceance Cr. at Hunter Cr. Water year

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	[illegible]					1260	1							1
	2	1364					1162	2							2
	3	1415					1176	3							3
	4	[illegible]					1200	4							4
	5	1453					1262	5							5
	6	1498					1260	6							6
	7	1502	NO DATA	NO DATA				7							7
	8	1516					1232	8							8
Card No. 02	9	1518					1266	9							9
	10	1526					[illegible]	10							10
	11	1554					1252	11							11
	12	1556				NO DATA	1240	12							12
	13	1558					[illegible]	13							13
	14	1542	1230				1212	14							14
	15	[illegible]	1280		NO DATA		1216	15							15
	16	1513	1270				1200	16							16
Card No. 03	17	[illegible]	1270					17							17
	18	1524	1260					18							18
	19	1548	1260					19							19
	20	1530	1260					20							20
	21	[illegible]	1210			1262		21							21
	22	1534	1260			1220		22							22
	23	[illegible]	1250			1220		23							23
	24	1556	1250	LINES		1242		24							24
Card No. 04	25	[illegible]	1220	FROZEN		[illegible]		25							25
	26		1230			1258		26							26
	27		1240			1262		27							27
	28		1240			1215		28							28
	29		1250					29							29
	30		1240			-------		30							30
	31		-------			-------		31	-------		-------			-------	31

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

,00095

,00095

marks

PROVISIONAL DATA SUBJECT TO REVISION

GPO : 1971 O 412 477

ND (μmhos)
EAN

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306061 Piceance Cr. at Hunter Cr. Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)
Card No. 01	1	1396					1240	1						
	2	1398					1237	2						
	3	1457					1239	3						
	4	1468					1273	4						
	5	1466					1281	5						
	6	1483					1275	6						
	7	1512		NO DATA				7						
	8	1529	NO DATA				1249	8						
Card No. 02	9	1527					1281	9						
	10	1536					1286	10						
	11	1577					1278	11						
	12	1579			NO DATA	NO DATA	1259	12						
	13	1570					1263	13						
	14	1553	1280				1248	14						
	15	1532	1280				1225	15						
	16	1524	1280				1256	16						
Card No. 03	17	1529	1280					17						
	18	1541	1280					18						
	19	1544	1270					19						
	20	1578	1270					20						
	21	1540	1270	LINES		1271		21						
	22	1561	1270	FROZEN		1248		22						
	23	1561	1260			1262		23						
	24	1546	1260			1261		24						
Card No. 04	25	1528	1240			1269		25						
	26		1230			1267		26						
	27		1250			1266		27						
	28		1250			1249		28						
	29		1250			——		29						-
	30		1250			-------		30						
	31		-------			-------		31	-------		-------			-------

TOTAL CHECK CARD

Type T (1) Water year 1979 (17–20) Total value (sum of daily value entries) (21–32)

Par Code 00095

Stat Code 00003

Remarks

TEMP (DEG F)
MAX

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306061 Piceance Cr. at Hunter Cr. Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	16.1					11.5	1							1
	2	14.8					12.5	2							2
	3	14.5					12.0	3							3
	4	15.4					9.0	4							4
	5	15.3				FROZEN	12.0	5							5
	6	15.3	NO DATA	NO DATA			10.0	6							6
	7	15.1						7							7
	8	13.8				PUMP BLOCKED	8.0	8							8
Card No. 02	9	14.9					11.0	9							9
	10	14.7					13.0	10							10
	11	15.0					12.5	11							11
	12	15.0					13.0	12							12
	13	13.1					8.5	13							13
	14	13.8	5.5				13.0	14							14
	15	13.3	5.0				7.5	15							15
	16	13.7	6.0				11.0	16							16
Card No. 03	17	11.7	5.0					17							17
	18	13.0	5.0					18							18
	19	13.9	5.5					19							19
	20	10.6	5.5					20							20
	21	11.0	5.0			5.0		21							21
	22	11.8	6.0	LINES		3.0		22							22
	23	15.9	5.0	FROZEN		4.0		23							23
	24	15.7	4.5			5.0		24							24
Card No. 04	25	14.3	5.0			7.0		25							25
	26		5.0			5.5		26							26
	27		4.5			4.0		27							27
	28		3.0		LINES	9.0		28							28
	29		4.5		FROZEN			29							29
	30		5.5			-------		30							30
	31		-------			-------		31	-------		-------			-------	31

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17 20	21 32

Par Code 00010
Stat Code 00001

Remarks

SUBJECT TO REVISION

Temp, water (DegF)

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306061 Piceance Cr. at Hunter Cr. Water year

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	7.2					2.5	1							1
	2	7.6					3.0	2							2
	3	5.0					3.0	3							3
	4	5.6					3.5	4							4
	5	6.7					4.0	5							5
	6	6.6					4.5	6							6
	7	7.3	NO DATA	NO DATA				7							7
	8	7.3					3.0	8							8
Card No. 02	9	8.0					1.5	9							9
	10	9.2					2.0	10							10
	11	8.1					3.0	11							11
	12	7.6					3.5	12							12
	13	6.8					5.0	13							13
	14	6.4	4.5				5.0	14							14
	15	6.9	4.0				5.0	15							15
	16	7.1	3.5				1.5	16							16
Card No. 03	17	7.6	3.0		NO DATA			17							17
	18	8.6	2.0					18							18
	19	7.1	2.0					19							19
	20	7.5	1.0					20							20
	21	[illegible]	1.5			3.0		21							21
	22	8.8	2.0			0.0		22							22
	23	11.9	1.5			0.0		23							23
	24	13.3	1.0			1.0		24							24
Card No. 04	25	13.6	1.5			0.0		25							25
	26		2.5			1.0		26							26
	27		1.0			2.0		27							27
	28		0			1.0		28							28
	29		2.0			——		29							29
	30		3.1			-------		30							30
	31		-------			-------		31	-------		-------			-------	31

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	19[illegible]9	
1	17 20	21 32

Par Code 00010

Stat Code 00002

marks

PRELIMINARY DATA SUBJECT TO REVISION

GPO : 1971 O - 442-477

II A-95

MEAN TEMP (DEgF)

Coding Form for Input and Update of Daily Values--Continued

Station identification number 09306061 Piceance Cr. at Hunter Cr.　　Water year 1979

	DAY	OCT (10)	NOV (11)	DEC (12)	JAN (01)	FEB (02)	MAR (03)	DAY	APR (04)	MAY (05)	JUNE (06)	JULY (07)	AUG (08)	SEPT (09)	DAY
Card No. 01	1	11.5					6.5	1							1
	2	10.9					7.5	2							2
	3	9.8					7.5	3							3
	4	10.1					6.0	4							4
	5	10.4					7.3	5							5
	6	10.6	NO DATA	NO DATA			7.0	6							6
	7	10.9						7							7
	8	10.8					5.0	8							8
Card No. 02	9	11.1					6.0	9							9
	10	10.9					7.0	10							10
	11	11.1				DATA	7.5	11							11
	12	11.5					8.0	12							12
	13	9.6					6.5	13							13
	14	9.6	5.0				8.0	14							14
	15	9.6	4.5				6.5	15							15
	16	9.6	4.5		NO		6.5	16							16
Card No. 03	17	9.5	4.0					17							17
	18	10.4	3.5					18							18
	19	10.1	3.5					19							19
	20	9.4	3.5					20							20
	21	10.1	3.5	LINES		4.0		21							21
	22	10.5	4.0	FROZEN		2.0		22							22
	23	12.9	3.5			1.5		23							23
	24	14.6	3.0			3.5		24							24
Card No. 04	25	12.8	3.5			3.5		25							25
	26		3.5			3.0		26							26
	27		3.0			3.0		27							27
	28		2.0			5.0		28							28
	29		3.0			—		29							29
	30		4.0			-------		30							30
	31		-------			-------		31	-------		-------			-------	31

TOTAL CHECK CARD

Type	Water year	Total value (sum of daily value entries)
T	1979	
1	17　20	21　32

Par Code 00010

Stat Code 00003

Remarks PRELIMINARY DATA SUBJECT TO REVISION

GPO : 1971 O - 442 477

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306061 - PICEANCE CREEK AB HUNTER C, NEAR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	TEMPER- ATURE (DEG C)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	WEATHER (WMO CODE NUMBER)	SURFACE AREA (SQ MI)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TUR- BID- ITY (NTU)	COLOR (PLAT- INUM- COBALT UNITS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)
OCT											
25...	1100	8.0	80020	1	309	--	2.1	7	1500	6.8	--
NOV											
14...	1300	3.0	80020	1	309	18	--	10	1320	9.6	--
DEC											
05...	1415	2.0	80020	1	309	--	--	--	950	10.4	12
JAN											
18...	1400	4.5	80020	1	309	--	--	7	1200	10.2	--
FEB											
21...	1430	5.0	80020	1	309	--	--	8	1280	9.8	--
APR											
03...	1420	10.0	80020	1	309	--	--	5	1300	9.9	--
18...	1130	--	--	--	309	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306061 - PICEANCE CREEK AB HUNTER C, NEAR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	PH (UNITS)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	ALKA-LINITY (MG/L AS CACO3)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
OCT											
25...	8.1	8.5	550	670	0	--	.77	--	.62	.74	.02
NOV											
14...	8.5	--	--	--	0	--	.94	--	.51	.45	.01
DEC											
05...	7.9	--	--	--	--	0	--	--	--	--	--
JAN											
18...	7.8	14	450	550	0	--	1.2	1.3	.65	.66	.04
FEB											
21...	8.5	2.8	450	450	48	--	.86	.78	.41	.27	.08
APR											
03...	8.2	4.9	400	490	0	--	.62	.45	.35	.23	.00
18...	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306061 - PICEANCE CREEK AB HUNTER C, NEAR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHATE, TOTAL (MG/L AS PO4)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)
OCT											
25...	.04	.01	.10	.76	.66	.11	.16	.18	.09	.06	.03
NOV											
14...	.05	.01	.37	.46	.56	.38	.42	.12	.06	.04	.02
DEC											
05...	--	--	--	--	--	--	--	--	--	--	--
JAN											
18...	.06	.02	.50	.70	.71	.52	.55	.31	.00	.10	.00
FEB											
21...	.05	.02	.38	.35	.46	.40	.43	.28	.09	.09	.03
APR											
03...	.02	.02	.23	.23	.37	.25	.22	.09	.00	.03	.00
18...	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306061 - PICEANCE CREEK AB HUNTER C, NEAR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	SULFIDE TOTAL (MG/L AS S)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	SODIUM PERCENT
OCT											
25...	5.1	.6	--	--	520	0	75	81	200	3.8	45
NOV											
14...	6.1	1.0	--	--	470	--	84	62	--	3.0	41
DEC											
05...	--	--	.00	.0	--	--	--	--	--	--	--
JAN											
18...	5.2	1.0	--	--	430	0	73	60	130	2.7	40
FEB											
21...	4.8	.9	--	--	490	37	91	63	140	2.8	38
APR											
03...	3.9	.5	--	--	430	27	73	60	130	2.7	40
18...	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306061 - PICEANCE CREEK AB HUNTER C, NEAR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SULFATE DIS-SOLVED (MG/L AS SO4)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BORON, DIS-SOLVED (UG/L AS B)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)
OCT 25...	3.7	18	370	.8	18	3	--	240	--	--	--
NOV 14...	3.4	15	270	.6	17	2	--	230	--	--	--
DEC 05...	3.4	--	--	--	--	--	70	--	<1	0	5
JAN 18...	3.0	15	260	.7	17	2	--	180	--	--	--
FEB 21...	2.8	15	290	.7	15	2	--	160	--	--	--
APR 03...	3.0	16	270	.7	15	1	--	170	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306061 - PICEANCE CREEK AB HUNTER C, NEAR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	ZINC, DIS- SOLVED (UG/L AS ZN)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	LITHIUM DIS- SOLVED (UG/L AS LI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	ODOR, ATMOS- PHERIC (SEVER- ITY)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)
OCT											
25...	20	--	230	--	--	--	--	--	--	0	--
NOV											
14...	40	--	90	--	--	--	--	--	--	0	--
DEC											
05...	--	6	--	6	1900	10	20	10	1	0	3.4
JAN											
18...	10	--	40	--	--	--	--	--	--	0	--
FEB											
21...	20	--	0	--	--	--	--	--	--	0	--
APR											
03...	20	--	60	--	--	--	--	--	--	0	--
18...	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306061 - PICEANCE CREEK AB HUNTER C, NEAR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML)	PHENOLS (UG/L)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P)
OCT											
25...	--	--	--	--	--	--	.10	1100	--	1.50	.05
NOV											
14...	--	--	--	--	--	--	.10	--	43.3	1.18	.01
DEC											
05...	2.5	.08	K10	K10	1200	1	--	--	--	--	--
JAN											
18...	--	--	--	--	--	--	.00	833	--	1.13	.03
FEB											
21...	--	--	--	--	--	--	.00	890	--	1.21	.03
APR											
03...	--	--	--	--	--	--	.00	811	--	1.10	.02
18...	--	--	6600	5000	1100	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306061 - PICEANCE CREEK AB HUNTER C, NEAR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	BROMIDE DIS- SOLVED (MG/L AS BR)	NITRO- GEN, TOTAL (MG/L AS NO3)	MERCURY DIS- SOLVED (UG/L AS HG)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)
OCT										
25...	.03	--	3.4	--	6214.00	--	--	--	--	--
NOV										
14...	.01	--	4.2	--	6214.00	--	--	--	--	--
DEC										
05...	--	.2	--	.0	6214.00	3.7	<6.0	2.9	3.1	2.3
JAN										
18...	.05	--	5.4	--	6214.00	--	--	--	--	--
FEB										
21...	.10	--	3.8	--	6214.00	--	--	--	--	--
APR										
03...	.00	--	2.7	--	6214.00	--	--	--	--	--
18...	--	--	--	--	6214.00	--	--	--	--	--

MINOR GAUGING STATIONS

USGS WATER GAUGING STATION 09306036
Sorghum Gulch @ Mouth Near Rio Blanco

A. DAILY TABLES

1. Discharge (Flow)

9-192-a. July 1957

09306036

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of SORGHUM GULCH @ MOUTH River Creek

~~At~~ Near RIO BLANCO, COLO for the Year Ending September 30, 1979

Drainage Area .... Square Miles. Water-Stage Recorder CONTINUOUS Ratio 1 :

Max. Disch. .... Sec.-ft. at .... on .... (G. H. .... ft.). Max. G. H. .... ft. at .... on ....

Min. Disch. .... Sec.-ft. on .... (G. H. .... ft.). Min. G. H. .... ft. on ....

S - DISCHARGE SUBDIVIDED, V - VARIABLE SHIFT. DISCHARGE [illegible] FOR "a" - no gage height record, "b" - ice effect, * - OBSERVATION OF NO FLOW

CALENDAR YEAR

Day	October Gage height	October Discharge	November Gage height	November Discharge	December Gage height	December Discharge	January Gage height	January Discharge	February Gage height	February Discharge	March Gage height	March Discharge
1							"a"					
2												
3												
4												
5												
6												
7			*									
8												
9		NO FLOW										
10												
11												
12												
13							CLOCK STOPPED	NO FLOW				
14												
15												
16	*			NO FLOW		NO FLOW						
17												
18												
19												
20												
21					"a"							
22												
23							"a"	* ✓				
24												
25												
26					CLOCK STOPPED							
27												
28												
29												
30												
31					"a"							
Total		0.0		0.0		0.0						
Mean												
Second-feet per square mile												
Run-off in inches												
Run-off in acre-feet												
Maximum												
Minimum												

PRELIMINARY DATA SUBJECT TO REVISION

USGS WATER GAUGING STATION 09306039
Cottonwood Gulch Near Rio Blanco

A. DAILY TABLES

1. Discharge (Flow)

09306039

9-192-a. July 1957

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of COTTON WOOD GULCH River ~~Creek~~

Near RIO BLANCO, COLO for the Year Ending September 30, 1979

Drainage Area ________ Square Miles. Water-Stage Recorder CONTINUOUS Ratio 1 : 6

Max. Disch. ________ Sec.-ft. at ________ on ________ (G. H. ________ ft.). Max. G. H. ________ ft. at ________ on ________

Min. Disch. ________ Sec.-ft. on ________ (G. H. ________ ft.). Min. G. H. ________ ft. on ________

S- DISCHARGE SUBDIVIDED; V- VARIABLE SHIFT; DISCHARGE ESTIMATED

[illegible] "a" - No gage height record; "b" - ice effect

Calendar Year

	October		November		December		January		February		March	
Day	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Dischar
1		↑		↑ No Flow		↑	"a"	↑				
2												
3												
4												
5												
6												
7			✱									
8												
9												
10												
11		NO FLOW					CLOCK STOPPED	NO FLOW				
12												
13												
14												
15												
16	✱											
17						NO FLOW						
18					"a"							
19												
20												
21												
22								✱				
23					CLOCK STOPPED		"a"	↓				
24												
25												
26												
27												
28												
29												
30												
31		↓		↓	"a"	↓						
Total		0.0		0.0		0.0						
Mean												
Second-feet per square mile												
Run-off in inches												
Run-off in acre-feet												
Maximum												
Minimum												

PRELIMINARY DATA SUBJECT TO REVISION

II A-108

USGS WATER GAUGING STATION 09306042
Piceance Creek Tributary Near Rio Blanco

A. DAILY TABLES

1. Discharge (Flow)

9-192-a. July 1937

09306042

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of PICEANCE CREEK TRIBUTARY River Creek

~~At~~ Near RIO BLANCO, COLORADO for the Year Ending September 30, 1977

Drainage Area ______ Square Miles. Water-Stage Recorder CONTINUOUS Ratio 1 : 6

Max. Disch. ______ Sec-ft. at ______ on ______ (G. H. ______ ft.). Max. G. H. ______ ft. at ______ on ______

Min. Disch. ______ Sec.-ft. on ______ (G. H. ______ ft.). Min. G. H. ______ ft. on ______

S-DISCHARGE SUBDIVIDED, V-VARIABLE SHIFT, DISCHARGE ESTIMATED

FOR "a"-NO GAGE HEIGHT RECORD, "b" ICE EFFECT, *-OBSERVATION

Day	October Gage height	October Discharge	November Gage height	November Discharge	December Gage height	December Discharge	January Gage height	January Discharge	February Gage height	February Discharge	March Gage height	March Dischar
		↑		↑		↑		↑				
1				NO FLOW								
2												
3												
4												
5												
6		No Flow										
7			*									
8												
9												
10												
11												
12												
13						NO FLOW		NO FLOW				
14												
15	#											
16												
17												
18				NO FLOW			"a"					
19												
20							[illegible]					
21												
22								*				
23							"a"	✓				
24												
25												
26												
27												
28												
29												
30												
31		↓		↓		↓						

Calendar Year		October	November	December	January	February	March
	Total	0.0	0.0	0.0			
	Mean						
	Second-feet per square mile						
	Run-off in inches						
	Run-off in acre-feet						
	Maximum						
	Minimum						

II A-110

USGS WATER GAUGING STATION 09306175
Black Sulphur Creek Near Rio Blanco

A. DAILY TABLES

1. Discharge (Flow)

9-192-a. July 1947

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

BLACK SULPHUR CR.
NR. RIO BLANCO, COLO.
1978

File Number { Washington 0930617 / District

Used rating table dated No. 3

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of NO BLACK SULPHUR River / Creek

Near RIO BLANCO, COLO, for the Year Ending September 30, 19 78

Drainage Area 103 Square Miles. Water-Stage Recorder CONTINUOUS Ratio 1 : 6

Gage Read to .... Once / Twice a Day by ....

Gage heights used to half tenths between and feet hundredths below and tenths above these limits.

Day	October Gage height	October Discharge	November Gage height	November Discharge	December Gage height	December Discharge	January Gage height	January Discharge	February Gage height	February Discharge	March Gage height	March Discharge
1	1.62	3.2	1.66	3.8	1.64	4.2	1.56	2.9	1.60	2.8	1.68	4.2
2	1.63	3.4	1.65	3.6	1.65	4.4	1.54	2.6	1.54	2.0	1.66	3.8
3	1.62	3.2	1.65	3.6	1.65	4.4	1.63	3.4	1.48	1.2	1.64	3.4
4	1.60	2.8	1.65	3.6	1.65	4.4	1.66	3.8	1.49	1.4	1.65	3.5
5	1.60	2.8	1.65	3.6	1.65	4.6	1.64	3.5	1.51	1.6	1.65	3.5
6	1.61	3.0	1.66	38	1.64	4.4	1.64	3.5	1.63	3.4	1.66	3.6
7	1.62	3.2	1.66	3.8	1.64	4.4	1.63	3.4	1.63	3.4	1.67	3.8
8	1.61	3.0	1.64	3.5	1.64	4.4	1.61	2.5	1.56	2.3	1.68	4.0
9	1.61	3.0	1.63	3.4	1.62	4.2	1.63	3.2	1.50	1.5	1.68	4.0
10	1.61	3.0	1.64	3.5	1.63	4.2	1.63	3.2	1.58	2.6	1.72	4.8
11	1.62	3.2	1.66	3.8	1.63	4.2	1.63	3.2	1.71	4.8	1.72	4.8
12	1.61	3.5	1.66	3.8	1.62	40	1.61	2.3	1.70	4.6	1.71	4.6
13	1.65	3.6	1.66	3.8	1.62	38	1.62	3.0	1.73	5.2	1.70	4.4
14	1.65	3.6	1.66	3.8	1.63	4.0	1.62	3.0	1.68	4.2	1.71	4.6
15	1.65	3.6	1.66	3.8	1.63	4.0	1.62	3.0	1.67	4.0	1.70	4.4
16	1.65	3.6	1.65	3.6	1.62	3.8	1.62	3.0	1.67	4.0	1.68	4.0
17	1.65	3.6	1.66	3.8	1.57	3.0	1.62	3.0	1.64	3.5	1.72	4.8
18	1.65	3.6	1.66	3.8	1.64	40	1.61	2.8	1.62	3.2	1.71	4.6
19	1.65	3.6	1.62	34	1.59	32	1.60	2.7	1.65	3.6	1.72	4.8
20	1.66	3.8	1.60	30	1.52	22	1.61	2.8	1.67	4.0	1.71	4.6
21	1.66	3.8	1.62	3.4	1.51	2.0	1.61	2.8	1.66	3.8	1.67	4.2
22	1.66	3.8	1.67	4.2	1.57	29	1.60	2.7	1.65	3.6	1.63	3.2
23	1.66	3.8	1.67	44	1.61	3.4	1.60	2.7	1.67	4.0	1.64	3.4
24	1.65	3.6	1.67	4.4	1.61	3.4	1.55	2.0	1.68	4.2	1.75	5.4
25	1.66	3.8	1.68	4.6	1.59	3.0	1.62	3.0	1.70	4.6	1.72	4.8
26	1.70	4.6	1.68	4.6	1.61	3.4	1.62	3.0	1.73	5.2	1.71	4.6
27	1.69	4.4	1.67	4.6	1.62	3.5	1.63	3.2	1.73	5.2	1.70	4.4
28	1.69	4.4	1.67	4.6	1.62	3.4	1.60	2.8	1.70	4.6	1.70	4.2
29	1.68	4.2	1.65	4.2	1.62	3.4	1.63	3.4	X	X	1.70	4.2
30	1.67	4.0	1.65	4.2	1.62	3.4	1.59	2.7	X	X	1.70	4.2
31	1.66	3.8	X	X	1.62	3.4	1.61	3.0	X	X	1.70	4.2
Total		110.5		116.0		114.8		91.8		98.5		131.0
Mean		3.56		3.86		3.70		2.96		3.51		4.22
Second-feet per square mile												
Run-off in inches												
Run-off in acre-feet												
Maximum												
Minimum												

Day	April Gage height	April Discharge	May Gage height	May Discharge	June Gage height	June Discharge	July Gage height	July Discharge	August Gage height	August Discharge	September Gage height	September Discharge
1	1.72	4.6	1.58	2.2	1.46	.90	1.52	1.8	1.62	2.7	1.47	.50
2	1.73	4.8	1.60	2.4	1.47	1.0	1.52	1.8	1.61	2.6	1.49	.51
3	1.73	4.8	1.61	2.6	1.46	1.0	1.51	1.6	1.60	2.4	1.49	.48
4	1.71	4.2	1.59	2.3	1.49	1.4	1.48	1.2	1.59	2.3	1.49	.50
5	1.73	4.6	1.63	2.8	1.60	2.8	1.48	1.2	1.58	2.0	1.49	.47
6	1.71	4.2	1.66	3.5	1.49	1.4	1.47	1.0	1.58	2.0	1.49	.51
7	1.70	4.0	1.61	2.7	1.47	1.1	1.47	1.0	1.52	1.2	1.48	.40
8	1.70	4.0	1.63	3.0	1.47	1.1	1.47	1.0	1.45	.40	1.48	.38
9	1.67	3.8	1.55	1.9	1.46	1.0	1.47	1.0	1.48	.66	1.47	.34
10	1.67	3.8	1.46	.75	1.46	1.0	1.47	1.0	1.50	.79	1.47	.32
11	1.68	3.5	1.42	.30	1.46	1.0	1.48	1.1	1.50	.80	1.47	.27
12	1.67	3.4	1.41	.20	1.46	1.0	1.45	1.1	1.51	.88	1.47	.26
13	1.67	3.4	1.41	.20	1.44	.75	1.47	1.0	1.51	.91	1.48	.36
14	1.67	3.4	1.43	.50	1.43	.63	1.47	1.0	1.53	1.0	1.47	.35
15	1.66	3.2	1.45	.75	1.43	.63	1.46	.9	1.53	1.1	1.48	.40
16	1.65	3.0	1.46	.90	1.42	.50	1.45	.75	1.53	.98	1.48	.38
17	1.65	3.0	1.50	1.4	1.44	.75	1.45	.75	1.52	.87	1.49	.45
18	1.66	3.2	1.51	1.5	1.47	1.1	1.44	.63	1.52	.91	1.49	.46
19	1.63	2.7	1.51	1.5	1.49	1.4	1.43	.50	1.54	1.1		
20	1.60	2.3	1.49	1.2	1.51	1.6	1.43	.50	1.53	1.0		
21	1.60	2.3	1.51	1.5	1.53	1.9	1.44	.63	1.54	1.1		
22	1.59	2.2	1.50	1.4	1.53	1.9	1.47	1.0	1.55	1.2		
23	1.60	2.3	1.51	1.5	1.54	2.0	1.52	1.6	1.53	1.0		
24	1.55	1.6	1.52	1.6	1.55	2.2	1.51	1.5	1.53	.97		
25	1.55	1.6	1.51	1.5	1.54	2.0	1.41	1.2	1.53	.99		
26	1.55	1.6	1.50	1.4	1.53	1.9	1.52	1.6	1.53	1.0		
27	1.57	1.9	1.49	1.2	1.50	1.5	1.51	1.5	1.53	.99		
28	1.57	2.0	1.50	1.4	1.53	1.9	1.48	1.1	1.51	.77		
29	1.58	2.2	1.52	1.6	1.55	2.2	1.42	1.0	1.51	.80		
30	1.58	2.2	1.52	1.6	1.53	1.9	1.5	1.5	1.53	1.0		
31	X	X	1.48	1.1	X	X	1.60	2.6	1.52	.82		
Total		93.8		48.4		41.5		36.0		37.2		
Mean		3.13		1.56		1.38		1.16		1.20		
Second-feet per square mile												
Run-off in inches												
Run-off in acre-feet												
Maximum												
Minimum												

PRELIMINARY RECORD
SUBJECT TO REVISION

Quarter First Second Third Fourth — Computed RLR — RLR
Checked .... Date ....

Quarter First Second Third Fourth — Disch. applied — RLR —
Disch. checked JFH Date ....

Quarter First Second Third Fourth — G.H. copied — RLR —
G.H. checked JOF Date ....

WATER YEAR 1978

Max. Disch. .... Sec.-ft. at .... on .... (G. H. .... ft.). Max. G. H. .... ft. at .... on ....

Min. Disch. .... Sec.-ft. on .... (G. H. .... ft.). Min. G. H. .... ft. on ....

CALENDAR YEAR 1977

S - DISCHARGE SUBDIVIDED. V- VARIABLE SHIFT. DISCHARGE ESTIMATED FOR

"R" - NO GAGE HEIGHT RECORD. "B" - ICE EFFECT.

II A-112

USGS WATER GAUGING STATION 09306200
Piceance Creek Below Ryan Gulch

A. WATER QUALITY DATA
PROCESS DATE 6/23/79

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306200 - PICEANCE CREEK BL RYAN GULCH, NR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	TEMPER- ATURE (DEG C)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	SURFACE AREA (SQ MI)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	OXYGEN, DIS- SOLVED (MG/L)	PH (UNITS)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	ALKA- LINITY (MG/L AS CACO3)	BICAR- BONATE (MG/L AS HCO3)
OCT											
24...	1015	4.0	80020	485	12	1800	11.7	8.1	9.5	620	750
NOV											
21...	1300	4.0	80020	485	19	1500	12.6	8.1	7.5	480	590
DEC											
11...	1200	.5	80020	485	16	1650	12.0	7.6	23	480	580
JAN											
23...	1050	.0	80020	485	4.9	1950	10.6	8.0	12	620	760
FEB											
27...	1435	4.0	80020	485	19	1600	10.4	8.3	4.3	430	530
MAR											
29...	1225	6.5	80020	485	28	1500	9.7	8.6	2.5	500	610
APR											
18...	1230	11.0	80020	485	--	891	850	~~7.9~~ 8.5	7.3	300	360

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306200 - PICEANCE CREEK BL RYAN GULCH, NR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CAR-BONATE (MG/L AS CO3)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHATE, TOTAL (MG/L AS PO4)
OCT 24...	0	.48	.36	--	.01	.01	.10	.37	.11	.14	--
NOV 21...	0	.76	.40	--	.02	.01	.33	.42	.34	.40	--
DEC 11...	0	.95	.40	.02	.05	.01	.49	.45	.50	.54	--
JAN 23...	0	.98	.49	--	.10	.02	.37	.59	.39	.38	--
FEB 27...	0	1.3	.90	--	.06	.02	.33	.96	.35	.37	--
MAR 29...	0	.93	.75	--	.03	.02	.13	.78	.15	.17	--
APR 18...	0	4.8	4.0	--	.09	.06	.63	4.1	.69	.70	2.9

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306200 - PICEANCE CREEK BL RYAN GULCH, NR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	SODIUM PERCENT	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
OCT											
24...	.00	.04	.00	640	21	88	100	2 0	4.3	46	3.7
NOV											
21...	.09	.09	.03	520	36	80	77	170	3.3	42	2.9
DEC											
11...	.09	.11	.03	530	58	82	79	180	3.4	42	3.5
JAN											
23...	.12	.14	.04	580	0	83	89	2 0	4.4	47	4.4
FEB											
27...	.03	.12	.01	530	95	84	77	150	2.8	38	2.8
MAR											
29...	.00	.12	.00	540	40	90	76	160	3.0	39	2.9
APR											
18...	.00	.94	.00	300	8	55	40	97	2.4	41	2.8

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306200 - PICEANCE CREEK BL RYAN GULCH, NR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SULFATE DIS- SOLVED (MG/L AS SO4)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	ARSENIC DIS- SOLVED (UG/L AS AS)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BARIUM, SUS- PENDED RECOV- ERABLE (UG/L AS BA)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM DIS- SOLVED (UG/L AS CD)
OCT											
24...	18	510	.8	16	3	--	0	--	--	260	0
NOV											
21...	12	370	.7	17	2	--	70	--	--	210	3
DEC											
11...	13	390	.8	18	2	--	70	--	--	230	<1
JAN											
23...	19	440	.9	19	2	--	80	--	--	250	2
FEB											
27...	20	360	.7	16	2	--	100	--	--	180	1
MAR											
29...	12	360	.7	13	2	--	100	--	--	170	0
APR											
18...	9.3	190	.5	11	2	16	0	1200	1200	130	0

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306200 - PICEANCE CREEK BL RYAN GULCH, NR RIO BLANCO. CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CADMIUM SUS- PENDED RECOV- ERABLE (UG/L AS CD)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	COPPER, SUS- PENDED RECOV- ERABLE (UG/L AS CU)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, S S- PENDED RECOV- ERABLE (UG/L AS FE)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
OCT 24...	--	--	--	--	1	--	--	--	--	30	1
NOV 21...	--	--	--	--	2	--	--	--	--	70	4
DEC 11...	--	--	--	--	3	--	--	--	--	30	5
JAN 23...	--	--	--	--	2	--	--	--	--	20	24
FEB 27...	--	--	--	--	2	--	--	--	--	30	4
MAR 29...	--	--	--	--	0	--	--	--	--	30	0
APR 18...	0	0	110	17	2	65	67	81000	81000	0	0

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306200 - PICEANCE CREEK BL RYAN GULCH, NR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	ZINC, DIS-SOLVED (UG/L AS ZN)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN)
OCT 24...	--	--	--	--	90	--	--	--	3900	10	--
NOV 21...	--	--	--	--	70	--	--	--	3000	10	--
DEC 11...	--	--	--	--	60	--	--	--	3000	10	--
JAN 23...	--	--	--	--	80	--	--	--	3200	4	--
FEB 27...	--	--	--	--	0	--	--	--	2900	20	--
MAR 29...	--	--	--	--	50	--	--	--	2500	20	--
APR 18...	48	48	2400	2400	30	2	68	0	1400	10	250

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306200 - PICEANCE CREEK BL RYAN GULCH, NR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	LITHIUM DIS-SOLVED (UG/L AS LI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE)	SELE-NIUM, TOTAL (UG/L AS SE)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML)	PHENOLS (UG/L)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT											
24...	--	10	1	--	--	--	--	--	--	.10	1360
NOV											
21...	--	10	2	--	--	--	--	--	--	.20	1030
DEC											
11...	--	10	2	--	--	--	--	--	0	.10	1060
JAN											
23...	--	20	1	--	--	--	--	--	--	.00	1280
FEB											
27...	--	20	1	--	--	--	--	--	--	.00	977
MAR											
29...	--	10	1	--	--	--	--	--	--	.00	1020
APR											
18...	250	8	1	2	3	10000	8500	2500	0	.00	588

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306200 - PICFANCE CREEK BL RYAN GULCH, NR RIO BLANCO, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	PHOS-PHORUS, ORTHO. TOTAL (MG/L AS P)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	PHOS-PHORUS TOTAL (MG/L AS PO4)	NITRO-GEN, TOTAL (MG/L AS NO3)	MERCURY DIS-SOLVED (UG/L AS HG)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD)
OCT											
24...	44.8	1.85	.03	--	--	--	2.1	.0	--	--	6070.00
NOV											
21...	52.8	1.40	.03	--	--	--	3.4	.0	--	--	6070.00
DEC											
11...	45.8	1.44	.04	--	.03	--	4.2	.0	--	--	6070.00
JAN											
23...	16.9	1.74	.07	--	--	--	4.3	.0	--	--	6070.00
FEB											
27...	50.1	1.33	.05	--	--	--	5.8	.0	--	--	6070.00
MAR											
29...	77.7	1.39	.03	--	--	--	4.1	.0	--	--	6070.00
APR											
18...	--	.80	.09	.11	--	2.9	21	.0	.0	.0	6070.00

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USGS WATER GAUGING STATION 09306222
Piceance Creek at White River

A. WATER QUALITY DATA
PROCESS DATE 6/23/79

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306222 - PICEANCE CREEK AT WHITE RIVER, CO.

PROCESS DATE 06/23/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	TEMPER-ATURE (DEG C)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	SURFACE AREA (SQ MI)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	OXYGEN, DIS-SOLVED (MG/L)	PH (UNITS)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	ALKA-LINITY (MG/L AS CACO3)	BICAR-BONATE (MG/L AS HCO3)
OCT											
24...	1250	5.5	80020	629	14	2800	11.9	8.2	12	960	1170
NOV											
22...	1100	1.5	80020	629	29	2000	12.2	8.0	13	670	820
DEC											
11...	1015	.5	80020	629	20	2400	10.4	7.5	52	840	1020
JAN											
23...	0845	.5	80020	629	18	2350	--	8.1	16	1010	1230
FEB											
27...	0900	.5	80020	629	26	2000	11.7	8.4	6.3	810	840
MAR											
29...	1330	6.5	80020	629	33	2150	9.9	8.7	3.0	760	930
APR											
18...	1330	14.0	80020	629	--	1350	7.5	7.9	12	480	590

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306222 - PICEANCE CREEK AT WHITE RIVER, CO.

PROCESS DATE 06/23/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CARBONATE (MG/L AS CO3)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHATE, TOTAL (MG/L AS PO4)
OCT											
24...	0	.84	.82	--	.01	.01	.00	.83	.01	.02	--
NOV											
22...	0	--	--	--	.08	.01	.34	--	.35	.37	--
DEC											
11...	0	1.3	.64	.08	.11	.02	.49	.75	.51	.57	--
JAN											
23...	0	1.2	.57	--	.23	.02	.40	.80	.42	.44	--
FEB											
27...	72	--	--	--	--	--	--	--	--	.41	--
MAR											
29...	0	2.1	1.7	--	.11	.02	.23	1.8	.25	.27	--
APR											
18...	0	3.3	2.3	--	.10	.08	.81	2.4	.89	.84	2.4

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306222 - PICEANCE CREEK AT WHITE RIVER, CO.

PROCESS DATE 06/23/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	SODIUM PERCENT	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
OCT											
24...	.00	.17	.00	600	0	58	110	490	8.7	64	4.7
NOV											
22...	.31	.36	.10	510	0	68	81	290	5.6	55	3.6
DEC											
11...	.18	.15	.06	590	0	82	92	350	6.3	56	5.0
JAN											
23...	.21	.29	.07	550	0	73	89	460	8.5	64	5.9
FEB											
27...	.09	--	.03	500	0	70	79	360	7.0	61	3.7
MAR											
29...	.00	.56	.00	510	0	72	80	350	6.8	60	3.5
APR											
18...	.09	.79	.03	370	0	60	54	200	4.5	54	3.1

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 06/23/79
09306222 - PICEANCE CREEK AT WHITE RIVER, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SULFATE DISSOLVED (MG/L AS SO4)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	ARSENIC DISSOLVED (UG/L AS AS)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, DISSOLVED (UG/L AS B)	CADMIUM DISSOLVED (UG/L AS CD)
OCT 24...	52	590	1.2	13	4	--	200	--	--	420	1
NOV 22...	35	420	.9	16	3	--	100	--	--	320	2
DEC 11...	42	460	1.2	18	3	--	200	--	--	350	1
JAN 23...	62	440	1.4	17	3	--	200	--	--	370	1
FEB 27...	48	400	1.1	16	3	--	100	--	--	280	1
MAR 29...	39	420	1.1	13	3	--	100	--	--	300	0
APR 18...	23	260	.8	12	3	8	0	500	500	230	0

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306222 - PICEANCE CREEK AT WHITE RIVER, CO.

PROCESS DATE 06/23/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)
OCT 24...	--	--	--	--	3	--	--	--	--	50	0
NOV 22...	--	--	--	--	9	--	--	--	--	20	4
DEC 11...	--	--	--	--	3	--	--	--	--	760	5
JAN 23...	--	--	--	--	5	--	--	--	--	60	6
FEB 27...	--	--	--	--	4	--	--	--	--	40	3
MAR 29...	--	--	--	--	0	--	--	--	--	300	0
APR 18...	0	0	40	10	3	49	52	27000	27000	40	0

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306222 - PICEANCE CREEK AT WHITE RIVER, CO.

PROCESS DATE 06/23/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	ZINC, DIS-SOLVED (UG/L AS ZN)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN)
OCT											
24...	--	--	--	--	40	--	--	--	3000	10	--
NOV											
22...	--	--	--	--	40	--	--	--	2700	10	--
DEC											
11...	--	--	--	--	60	--	--	--	3000	20	--
JAN											
23...	--	--	--	--	40	--	--	--	2600	30	--
FEB											
27...	--	--	--	--	60	--	--	--	2300	20	--
MAR											
29...	--	--	--	--	40	--	--	--	2200	20	--
APR											
18...	45	45	820	830	10	7	32	2	1800	10	120

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306222 - PICEANCE CREEK AT WHITE RIVER, CO.

PROCESS DATE 06/23/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	LITHIUM DIS- SOLVED (UG/L AS LI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SELE- NIUM, SUS- PENDED TOTAL (UG/L AS SE)	SELE- NIUM, TOTAL (UG/L AS SE)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, (COLS. PER 100 ML)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
OCT											
24...	--	30	1	--	--	--	--	--	--	.10	1900
NOV											
22...	--	20	2	--	--	--	--	--	--	.10	1320
DEC											
11...	--	40	2	--	--	--	--	--	0	.10	1560
JAN											
23...	--	50	1	--	--	--	--	--	--	.00	1760
FEB											
27...	--	30	1	--	--	--	--	--	--	.00	1470
MAR											
29...	--	30	1	--	--	--	--	--	--	.00	1440
APR											
18...	130	10	2	0	2	4200	1000	900	0	.00	910

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306222 - PICFANCE CREEK AT WHITE RIVER, CO.

PROCESS DATE 06/23/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	PHOS-PHORUS, ORTHO. TOTAL (MG/L AS P)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	PHOS-PHORUS TOTAL (MG/L AS PO4)	NITRO-GEN. TOTAL (MG/L AS NO3)	MERCURY DIS-SOLVED (UG/L AS HG)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD)
OCT											
24...	76.4	2.58	.03	--	--	--	3.7	.0	--	--	5730.00
NOV											
22...	103	1.80	.05	--	--	--	--	.0	--	--	5730.00
DEC											
11...	84.2	2.12	.07	--	.10	--	5.6	.0	--	--	5730.00
JAN											
23...	85.5	2.39	.14	--	--	--	5.4	.0	--	--	5730.00
FEB											
27...	106	2.00	--	--	--	--	--	.0	--	--	5730.00
MAR											
29...	131	1.96	.08	--	--	--	9.1	.0	--	--	5730.00
APR											
18...	--	1.24	.09	.12	--	2.4	15	.0	.0	.0	5730.00

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USGS WATER GAUGING STATION 09306235
Corral Gulch Below Water Gulch Near Rangely

A. WATER QUALITY DATA
PROCESS DATE 5/18/79

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 05/18/79
09306235 - CORRAL GULCH BELOW WATER GULCH, NR RANGELY, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	TEMPERATURE (DEG C)	AGENCY ANALYZING SAMPLE (CODE NUMBER)	WEATHER (WMO CODE NUMBER)	SURFACE AREA (SQ MI)	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	OXYGEN, DISSOLVED (MG/L)	PH (UNITS)	OIL AND GREASE, TOTAL RECOV. GRAVIMETRIC (MG/L)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)
OCT												
24...	0830	2.5	80020	--	8	.32	1700	10.6	8.2	--	470	97
NOV												
21...	1030	1.5	80020	--	8	.26	1100	10.8	8.0	--	460	87
DEC												
04...	0940	2.0	80020	--	8	.25	1100	10.2	8.3	--	470	91
JAN												
24...	1000	.5	80020	--	8	.06	1100	12.6	8.3	--	490	93
FEB												
22...	1300	1.0	80020	--	8	.16	1125	11.2	8.3	--	460	92
MAR												
12...	1235	--	80010	--	8	--	--	--	--	0	--	--
APR												
03...	1130	1.0	80020	1	8	--	900	10.8	8.1	--	360	68

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 05/18/79
09306235 - CORRAL GULCH BELOW WATER GULCH, NR RANGELY, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	TEMPER-ATURE (DEG C)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	WEATHER (WMO CODE NUMBER)	SURFACE AREA (SQ MI)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	OXYGEN, DIS-SOLVED (MG/L)	PH (UNITS)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
OCT												
24...	0830	2.5	80020	--	8	.32	1700	10.6	8.2	--	470	97
NOV												
21...	1030	1.5	80020	--	8	.26	1100	10.8	8.0	--	460	87
DEC												
04...	0940	2.0	80020	--	8	.25	1100	10.2	8.3	--	470	91
JAN												
24...	1000	.5	80020	--	8	.06	1100	12.6	8.3	--	490	93
FEB												
22...	1300	1.0	80020	--	8	.16	1125	11.2	8.3	--	460	92
MAR												
12...	1235	--	80010	--	8	--	--	--	--	0	--	--
APR												
03...	1130	1.0	80020	1	8	--	900	10.8	8.1	--	360	68

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 05/18/79
09306235 - CORRAL GULCH BELOW WATER GULCH, NR RANGELY, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	SODIUM PERCENT	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SULFATE DIS-SOLVED (MG/L AS SO4)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	ODOR, ATMOS-PHERIC (SEVER-ITY)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD)
OCT											
24...	55	150	3.0	38	56	150	310	.3	22	--	6980.00
NOV											
21...	58	82	1.7	28	1.1	7.6	300	.2	24	--	6980.00
DEC											
04...	59	83	1.7	29	1.5	7.8	280	.3	22	--	6980.00
JAN											
24...	62	83	1.6	27	1.2	7.4	280	.2	22	--	6980.00
FEB											
22...	57	83	1.7	28	.9	6.7	260	.2	19	--	6980.00
MAR											
12...	--	--	--	--	--	--	--	--	--	--	6980.00
APR											
0 ...	46	67	1.5	29	.8	5.8	230	.2	16	0	6980.00

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 05/18/79
09306235 - CORRAL GULCH BELOW WATER GULCH, NR RANGELY, CO. DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)	CHLORIDE, DISSOLVED (MG/L AS CL)	SULFATE DISSOLVED (MG/L AS SO4)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	ODOR, ATMOSPHERIC (SEVERITY)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD)
OCT											
24...	55	150	3.0	38	56	150	310	.3	22	--	6980.00
NOV											
21...	58	82	1.7	28	1.1	7.6	300	.2	24	--	6980.00
DEC											
04...	59	83	1.7	28	1.5	7.8	280	.3	22	--	6980.00
JAN											
24...	62	83	1.6	27	1.2	7.4	280	.2	22	--	6980.00
FEB											
22...	57	83	1.7	28	.9	6.7	260	.2	19	--	6980.00
MAR											
12...	--	--	--	--	--	--	--	--	--	--	6980.00
APR											
0 ...	46	67	1.5	29	.8	5.8	230	.2	16	0	6980.00

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USGS WATER GAUGING STATION 09306240
Box Elder Gulch Near Rangely

A. WATER QUALITY DATA
PROCESS DATE 5/18/79

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306240 - BOX ELDER GULCH NEAR RANGELY, CO.

PROCESS DATE 05/18/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SURFACE AREA (SQ MI)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, (COLS. PER 100 ML)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD)
APR						
18...	1430	9	K280	80	480	6955.00

USGS WATER GAUGING STATION 09306242
Corral Gulch Near Rangely

A. WATER QUALITY DATA
PROCESS DATE 5/18/79

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306242 - CORRAL GULCH NEAR RANGELY, CO.

PROCESS DATE 05/18/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	TEMPER- ATURE (DEG C)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	WEATHER (WMO CODE NUMBER)	SURFACE AREA (SQ MI)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	OXYGEN, DIS- SOLVED (MG/L)	PH (UNITS)	HARD- NESS (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)
OCT											
24...	1000	9.0	80020	--	31	3.2	1400	9.5	7.9	440	58
NOV											
21...	1121	8.0	80020	--	31	1.6	1500	9.8	7.7	520	80
DEC											
06...	1215	5.4	80020	--	31	1.3	1450	9.0	7.5	530	82
JAN											
24...	1150	7.0	80020	--	31	2.1	1500	9.6	7.8	480	65
FEB											
22...	1520	8.6	80020	--	31	2.0	1500	7.2	7.8	510	72
APR											
0[illegible]...	1540	7.0	80020	1	31	--	1800	7.1	8.1	430	48

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306242 - CORRAL GULCH NEAR RANGELY, CO.

PROCESS DATE 05/18/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	SODIUM PERCENT	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SULFATE DIS- SOLVED (MG/L AS SO4)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD)
OCT										
24...	71	180	3.7	47	1.9	11	330	1.0	31	6580.00
NOV										
21...	78	150	2.9	38	1.3	10	400	.5	23	6580.00
DEC										
06...	78	170	3.2	41	1.8	18	--	.5	22	6580.00
JAN										
24...	78	170	3.4	43	1.6	11	380	.8	27	6580.00
FEB										
22...	79	170	3.3	42	1.0	11	400	.8	23	6580.00
APR										
03...	75	180	3.8	48	.5	9.9	370	1.2	25	6580.00

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USGS WATER GAUGING STATION 09306244
Corral Gulch @ 84 Ranch

A. WATER QUALITY DATA
PROCESS DATE 5/18/79

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306244 - CORRAL GULCH AT 84 RANCH, CO.

PROCESS DATE 05/18/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	TEMPER-ATURE (DEG C)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TUR-BID-ITY (NTU)	COLOR (PLAT-INUM-COBALT UNITS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	PH (UNITS)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)
OCT												
24...	1100	6.0	80020	.10	.50	9	1600	10.3	1.3	53	7.6	27

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306244 - CORRAL GULCH AT 84 RANCH, CO.

PROCESS DATE 05/18/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ALKA-LINITY (MG/L AS CACO3)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	OIL AND GREASE (MG/L)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHATE, TOTAL (MG/L AS PO4)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)
OCT												
24...	550	670	0	0	.35	.00	.35	.03	.00	.03	.00	.01

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306244 - CORRAL GULCH AT 84 RANCH, CO.

PROCESS DATE 05/18/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	SULFIDE TOTAL (MG/L AS S)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	SODIUM PERCENT	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
OCT												
24...	8.8	1.0	.00	.1	660	110	100	100	200	3.4	40	2.7

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306244 - CORRAL GULCH AT 84 RANCH, CO.

PROCESS DATE 05/18/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SULFATE DIS-SOLVED (MG/L AS SO4)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	BORON, DIS-SOLVED (UG/L AS B)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT												
24...	16	500	.3	22	4	60	<1	210	<1	0	1	<10

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306244 - CORRAL GULCH AT 84 RANCH, CO.

PROCESS DATE 05/18/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGANESE, DIS-SOLVED (UG/L AS MN)	MOLYBDENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	STRONTIUM, DIS-SOLVED (UG/L AS SR)	VANADIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	ALUMINUM, DIS-SOLVED (UG/L AS AL)	LITHIUM DIS-SOLVED (UG/L AS LI)	SELENIUM, DIS-SOLVED (UG/L AS SE)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)
OCT 24...	7	2	31	2	2600	.0	<3	10	8	1	6.1	<.4

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306244 - CORRAL GULCH AT 84 RANCH, CO.

PROCESS DATE 05/18/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)	PER- THANE TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	LINDANE TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)
OCT												
24...	.07	0	1200 ~~100~~	0	.10	.00	.00	.00	.00	.0	.00	.00

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306244 - CORRAL GULCH AT 84 RANCH, CO.

PROCESS DATE 05/18/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	DDT, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	PCB, TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
OCT												
24...	.00	.00	.00	.00	.00	0	.00	.00	.0	.00	.00	.00

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306244 - CORRAL GULCH AT 84 RANCH, CO.

PROCESS DATE 05/18/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	METHYL PARA-THION, TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	MIREX, TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	BROMIDE DIS-SOLVED (MG/L AS BR)
OCT												
24...	.00	.00	.00	.00	.00	.00	.00	1280	.35	1.74	.00	.5

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306244 - CORRAL GULCH AT 84 RANCH, CO.

PROCESS DATE 05/18/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)
OCT							
24...	.0	6366.00	6.3	<14	<.4	5.6	<.4

USGS WATER GAUGING STATION 09306255
Yellow Creek Near White River

A. WATER QUALITY DATA
PROCESS DATE 5/18/79

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306255 - YELLOW CREEK NEAR WHITE RIVER, CO.

PROCESS DATE 05/18/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	TEMPER-ATURE (DEG C)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	SURFACE AREA (SQ MI)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	OXYGEN, DIS-SOLVED (MG/L)	PH (UNITS)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
OCT										
24...	1320	13.5	80020	262	.30	4200	9.5	8.4	320	47
NOV										
22...	0900	.5	80020	262	.70	4600	14.2	8.3	700	100
DEC										
06...	0940	.5	80020	262	.60	4400	10.8	8.0	520	28
JAN										
24...	1515	.0	80020	262	.02	5200	11.0	8.5	570	32

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
09306255 - YELLOW CREEK NEAR WHITE RIVER, CO.

PROCESS DATE 05/18/79
DISTRICT CODE 08

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	SODIUM PERCENT	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SULFATE DIS-SOLVED (MG/L AS SO4)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD)
OCT										
24...	50	900	22	86	5.5	210	550	2.5	10	5535.00
NOV										
22...	110	1000	16	75	6.1	210	610	2.8	11	5535.00
DEC										
06...	110	999	19	80	7.1	180	110	2.9	11	5535.00
JAN										
24...	120	1200	22	82	8.6	220	580	2.6	13	5535.00

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PRECIPITATION DATA

Precipitation Data

Precipitation data has been collected by the USGS and is reported for five stations in this report. For nomenclature purposes only, these stations are designated as WU15, WU22, WU50, WU58, and WU70. Data are provided as follows:

Station	Designation	'74	'75	'76	'77	'78	'79
WU15	Middle Fork Stewart Gulch		X	X	X	X	
WU22	Stewart Gulch Above West Fork		X	X	X	X	
WU50	Upper Scandard Gulch Near Rio Blanco		X	X	X	X	
WU58	Willow Creek		X	X	X	X	
WU70	Scandard Gulch in Roan Plateau	X	X	X	X	X	X

The reader should also see Section II B, Air Quality for discussion of precipitation from Stations AB20 and AB23.

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. {
District ....

STATION: Middle Fork Stewart Gulch WU15 YEAR: 1975

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1												
2												
3								0.03				
4									0.02			
5												
6												
7							0.18 E					
8												
9		0.50										
10			0.45					0.09				
11												
12												
13				1.00	1.01	2.04						
14												
15											2.20	
16												
17									0.24			0.60
18												
19												
20								0.00				
21							0.73					
22												
23												
24												
25												
26												
27												
28		X										
29		X										
30		X										
31		X		X		X						
Sum												

E = reading effected by evaporation

units = inches

Precipitation

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No.
District

STATION: MIDDLE FORK STEWART WU15 YEAR: 76

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1												
2												
3												
4												
5			0.11							0.10		
6							0.00					
7						0.49						0.00
8												
9					0.50				0.20			
10		0.16										
11											0.00	
12				0.70				0.05				
13												
14												
15			0.[illegible]			0.30	0.65					
16												
17										0.11		
18												
19												
20												
21						0.00						
22									0.77			
23												
24					0.70						0.01	
25			0.35	DRY			0.3[illegible]	0.00				
26												
27												
28												
29												
30										out of service		
31												
SUM												

units = inches

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { District ....

STATION: Middle Fork Stewart WU15 YEAR: 77

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1												
2												
3												
4	0.22	0.00			0.0	0.01				0.72	0.59	
5				0.17				0.19				
6												
7												
8			0.75				1.15					
9												
10												
11									1.34			
12								0.50				
13												
14	0.21											
15												
16		0.15										
17												
18				0.04	0.73					0.40	1.07	
19							0.54					
20			0.39			0.02						
21												
22								1.35				
23												
24												
25									0.00			
26												
27							0.30					
28												
29												
30												
31												
SUM	.43	.15	1.14	.21	.73	.03	1.99	2.04	1.34	1.12	1.66	
	1.09	.38	2.9	.53	1.85	.08	5.05	5.18	3.40	2.84	4.22	

IN

units - inches

STATION: Middle Fork Stewart WU15 YEAR: 78

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1												
2												
3					0.07		0.12					
4												
5												
6												
7												
8												
9												
10												
11						0.02						
12												
13												
14												
15								0.31			1.90	
16												
17		0.82										
18									1.27			
19										0.00		
20					0.45							
21	1.05											
22												
23			2.90									
24												
25												
26												
27					0.10							
28							0.58					
29												
30												
31												
SUM IN	1.05	0.82	2.9	0	0.62	0.02	0.70	0.31	1.27	[illegible]	1.90	
CM	2.67	2.08	7.37		1.57	0.05	1.78	0.79	3.23	0	4.83	

8 Standard Storage

units = inches

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. District

STATION: STEWART GULCH Ab WEST FORK WU22 YEAR: 1975

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1												
2												
3												
4							Out of service					
5									0.11			
6		1.00										
7												
8												
9												
10												
11			1.08									
12												
13.					Out of service	Out of Service						
14								1.13				1.38
15												
16				0.28							CLOSED FOR WINTER	
17										1.00		
18							0.65					
19									0.37			
20												
21												
22												
23												
24												
25							0.00					
26												
27												
28												
29		X										
30		X										
31		X		X		X						
Sum		1.00	1.08	.28				1.13	.48	1.00		1.38

reestablished July 15, 1975

units - inches

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. {
District

Precipitation

STATION: STEWART GULCH ABOVE WEST FORK WU22 YEAR: 1976

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1												
2												
3												
4												
5										0.20		
6							0.13					
7												
8						0.41			0.27			
9					1.01							
10								0.36				
11												
12												
13				0.73								
14		[illegible]					0.90					
15						0.24						
16												
17										0.00		
18												
19												
20												
21									0.83			
22						0.14						
23								0.53				
24				.05			0.64					
25					0.59							
26												
27												
28										Discontinued for Winter period		
29												
30												
31				X								
SUM				.78	1.60	.79	1.67	.89	1.10			

inches

cm.

units = inches

U.S. GOVERNMENT PRINTING OFFICE: 1963—O-763-758 657-600

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. District ....

STATION: STEWART GULCH AB WEST FORK WU22 YEAR: 77

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1												
2												
3												
4								0.30		0.70	0.54	
5					0.0							
6								0.25	2.10			
7						0.11		0				
8											closed	
9												
10				OPENED FOR			1.00				for	
11				SUMMER								
12								0.60			winter	
13												
14												
15												
16												
17												
18												
19				0.51	0.80			0.12	0.20	0.42		
20												
21												
22							0.72					
23												
24							0.62					
25								1.29				
26												
27												
28							0.04					
29												
30												
31												
SUM					0.80	0.11	2.38	2.56	2.30	1.12		IN
					2.03	0.28	6.05	6.5	5.84	2.84		CI

units – inches

WU2

STATION: [illegible] F. YEAR: 18

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	*	*	*	*	*								
2													
3													
4													
5													
6							0.18						
7													
8													
9													
10													
11													
12						0.00							
13													
14													
15													
16													
17								0.21					
18													
19													
20													
21													
22													
23					*								
24					opened				0.40				
25													
26													
27					0.24		0.37						
28		*											
29													
30						↓							
31	*		*	*	↓	X	↓						
SUM						0.0	0.55	✓0.21	0.40				IN
						0.0	1.40	.53	1.02				CM

Forest Service storage)

units – inches

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. Washington ....
District ....

STATION: N. Scandard Gulch nr Rio Blanco WU 50 YEAR: 1975

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1												
2												
3												
4									0.00			
5												
6												
7												
8												
9		0.50										
10												
11												
12												
13												
14				1.25	0.11	0.00 E		0.20				
15												
16											1.35	
17												0.79
18									0.38 E			
19												
20							0.56					
21												
22												
23												
24												
25												
26												
27												
28		X										
29		X										
30		X										
31		X		X	X							
SUM												

E = reading effected by evaporation

units = inches

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No.
District

WU50

STATION: SCANDARD GL NR RIO BLANCO YEAR: 76

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1												
2												
3												
4												
5			1.30				0.00					
6										0.02		
7						0.41						0.00
8												
9					0.46				0.10			
10											0.00	
11				0.65								
12		1.70						Trace				
13												
14												
15			0.1"			0.22						
16							0.65					
17												
18												
19										0.03		
20												
21												
22						0.00			0.70			
23												
24				DRY				0.00			TRACE	
25					0.91		[illegible]					
26												
27			0.30"									
28												
29												
30										OUT OF SERVICE		
31												
Sum												

units = inches

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No.
District

STATION: U. Scandard Gl nr Rio Blanco WU50 YEAR: 77

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1												
2												
3	0.23	0.00						0.37			[illegible]	
4					0.0							
5												
6						0.0	0.03					
7				0.47					1.27			
8			0.44									
9												
10												
11					0.72			0.34				
12	0.20						0.21					
13		0.12										
14										0.52		
15												
16											0.51	1.08
17												
18				0.20		0.02						
19							0.47					
20					[illegible]							
21			0.42				0.52					
22												
23												
24								1.40"	0.07			
25							0.41					
26												
27						0.08						
28					0.11						0.05	
29												
30												
31												
SUM	.43	.12	.86	.67	.92	0.10	1.64	2.11	1.34	0.52	1.69	1.08
	1.09	.30	2.18	1.7	2.34	.25	4.17	5.36	2.83	1.32	4.29	2.74

units - inches

GEOLOGICAL SURVEY WUS? [illegible]

STATION: Upper Scandard nr Rio Blanco YEAR: 78

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1													
2													
3					0.03								
4							0.28						
5													
6													
7													
8													
9													
10													
11													
12						0.02							
13													
14													
15								0.25					
16													
17		0.62											
18											1.53		
19					0.43								
20									0.50				
21	0.76									0.00			
22													
23													
24													
25			2.22										
26													
27					0.20		0.81						
28													
29													
30													
31													
SUM	0.76	0.62	2.22	0	0.66	.02	1.09	√0.25	0.50	0	1.53		IN
	1.93	1.57	5.79		1.68	.05	2.77	.64	1.27		3.29		CM

[illegible] 8" [illegible]

units = inches

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington ....
District ....

W1158

STATION: ~~Canal C1 at Walker Ditch~~ Willow Creek YEAR: 1975

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1												
2												
3												
4							Out of Service		0.00			
5								0.33				
6												
7												
8												
9		Out of Service										
10												
11			Out of Service	Out of Service								
12												
13					Out of Service							
14												
15						Out of Service	0.54					
16												
17										0.90		
18								0.27	0.43		NOT OPERATED IN WINTER	
19												
20												
21							0.33					
22												
23												
24												
25												
26												
27												
28												
29		X										
30		X										
31		X										
SUM								.65 1.65	.43 1.09	0.90 2.29		

Installed Jan. 20, 1975 destroyed by cows Jan 28, 1975.

reestablished July 15, 1975

units = inches

9-230

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. Washington ......
District ....

STATION: WILLOW CREEK WU58 YEAR: 1976

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1												
2												
3						0.28						
4												
5												
6							0.23			0.18		
7												
8												
9					0.83	0.43						
10												
11		NOT OPERATED DURING WINTER						0.19	OUT OF SERVICE			
12												
13				0.56								
14												
15						0.28	1.05					
16												
17										0.00		
18												
19												
20												
21						0.15						
22												
23					OVERTURNED 0.08 RESIDUAL							
24				OVERTURNED								
25							0.3[illegible]	0.25				
26												
27												
28												
29										[illegible] for		
30										Winter Period		
31				X		—						
SUM						1.14	1.61	.44				
						2.90	4.09	1.12				

units = inches

U.S. G… OFFICE : 19©5—O-763-759 857-606

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No.
District

STATION: Willow Creek 5200 WU53 YEAR: 1977

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1												
2							0.04	0.29				
3					0.29						0.72	
4												
5												
6						0.16	0.01					
7									2.07			
8												
9											closed	
10				Speedy Log								
11				Summ.	0.53			0.70			for	
12												
13							0.38				winter	
14										0.61		
15												
16												
17												
18				0.42								
19												
20						0.02						
21					0.11		0.16					
22												
23												
24								1.43"	0.06			
25							0.07					
26												
27												
28												
29												
30												
31												
SUM					0.93	0.20	0.66	2.42	2.13	.61		
					2.36	.51	1.68	5.15	5.14	1.55		

units = inches

STATION: Willow Creek WUSF YEAR: 77

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	*	*	*	*	*							
2												
3												
4												
5										No record available		
6							0.07					
7												
8												
9												
10												
11												
12						0.28						
13												
14												
15												
16												
17												
18								0.18				
19												
20												
21												
22					*							
23					OPENED				No record available			
24												
25												
26												
27					1.00		0.10					
28		*										
29												
30												
31	*		*	*								
SUM						.28	.17	.18				in.
						.71	.43	.46				cm.

[illegible]

units = inches

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. Washington
District

STATION: SCANDARD GULCH ON ROAN PLATEAU WU72 YEAR: 74

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1											0.08	
2											0.02	
3										0.40	0.20	
4										0.06	0.02	0.01
5										0.19		0.26
6												0.01
7												0.11
8											0 04	
9											0.28	
10									START OF RECORD		0.05	
11										0.30		
12										0.03		
13												0.18
14									0.45	↑		
15									0.55			0.21
16												0.10
17										NO RECORD		0.10
18											0.05	
19											0.02	0.03
20												0.02
21												0.01
22										↓	0.34	
23										0.[illegible]	0.11	0.05
24										0.05		
25												
26												
27										0.05	0.03	
28										0.06	0.27	
29										0.22		0.20
30										0.04		0.02
31										0.17		0.02
SUM											1.51	1.33
											3.84	3.38

units = inches

U.S. GOV'T

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. District

W470

STATION: SCANDARD GULCH ON ROAN PLATEAU YEAR: 75

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.01	0.05		.64		↑						
2	0.04											0.05
3									0.13			
4							0.29					
5		0.25	.07		0.90							
6	0.17		.30			NO RECORD						
7	0.08		.02	.34								
8	0.20										0.06	
9	0.21	0.18	.21	.05			0.10				0.06	
10	0.06	0.45	.39								0.08	
11	0.03		[illegible]	0.16				0.09	0.03			
12				0.01				0.08	0.09			0.08
13		0.01	.01						0.07			0.65
14		0.35					0.05		0.09			0.18
15		0.01					0.10					0.12
16		0.51	.01				0.33					
17		0.24	.27	0.34			0.03					
18				0.15		↓					0.13	
19	0.03				↑ 0.03						0.30	
20		[illegible]			↓	0.09	0.10					
21	0.15											
22			.25							[illegible]		
23			.08							[illegible]		
24										[illegible]		
25			.20								0.34	
26			.23									
27	0.01		.12	0.30							0.18	
28	0.83			0.03							0.55	
29	0.01			0.03	0.17						0.25	
30	0.27				↑					[illegible]		0.10
31	0.16		.23		↓					[illegible]		0.40
Sum	2.26	1.58	2.67	2.05			1.00	0.17	0.47	1.91	1.95	1.59
	5.74	4.01	6.78	5.21			2.54	.43	1.20	4.85	4.95	4.01
											16.71	

units = inches

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No.
District

WU70

STATION: Scandard Gulch on Roan Plateau YEAR: 76

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.05		0.25					0.04				
2	0.05		1.06							0.55		
3			0.08									
4	0.03	0.30	0.33									
5	0.22	[illegible]	0.04	0.13								0.12
6		0.28	[illegible]	0.03	Gage out of service 4-20-76							0.09
7				0.02					0.93			
8		[illegible]						0.22	0.05			
9		[illegible]										0.11
10		[illegible]						0.11				0.02
11			0.20			0.10		0.11	0.11			
12			0.01	0.27							0.04	
13				0.13		0.51					0.07	
14		[illegible]		0.10		0.03						
15		[illegible]										
16		[illegible]		0.07		0.09						
17		[illegible]		0.20		0.35	0.25	0.05				
18				0.13			0.35					
19		[illegible]		0.04			0.05					
20		[illegible]					0.37					
21		[illegible]							0.03			
22						0.51			0.26			
23									0.07			
24	[illegible]								0.24	0.01		
25	[illegible]		0.31				0.02				0.02	
26								0.13		0.02	0.07	
27												
28		0.02	0.01									
29											0.11	
30		X					0.07					
31		X		X			0.71				X	
SUM	0.59	3.43	2.29			—	1.82	.66	1.69	0.58	0.31	0.33
	1.50	8.71	5.82				4.62	1.68	4.29	1.47	.79	.84

11.00

unit = inches

U.S. GOVT

857-606

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { District ....

STATION: Standard Gulch on Loon [illegible] WU70 YEAR: 77

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.01	0.02	0.42	0.32								
2	0.05		0.26									
3	0.25		0.10	[illegible]	0.05				0.08			
4	0.01		0.06				0.07	0.03				
5	0.07		[illegible]				0.01	0.09				
6	0.02									0.52	0.48	
7											[illegible]	
8	0.05					0.06					[illegible]	
9												
10			[illegible]									
11			0.03						1.20			
12				0.26					0.04			0.05
13				0.08	0.25		0.03					0.03
14					0.38				0.04			0.11
15				0.30	0.26			0.14	0.10			0.16
16	0.05				[illegible]		0.05	0.01				
17	0.02		0.35				[illegible]	0.07				
18			0.20	0.05			0.01				0.05	0.27
19				0.21			0.16				[illegible]	
20							0.11					
21		0.07					0.05	0.36		[illegible]		
22	0.12	0.16					0.03				[illegible]	
23	0.11						0.03					0.12
24	0.02	0.05			[illegible]	0.03		0.18				
25		0.12	0.63			0.02		0.44				
26		0.25	0.09	0.13	[illegible]			0.36				
27			0.17				[illegible]	0.70				
28											[illegible]	
29										[illegible]		0.05
30										[illegible]		0.22
31				X						[illegible]		0.27
SUM	0.78	0.67	2.91		1.34	[illegible]	0.60	2.38	1.46	.93	1.96	1.28 IN.
	1.98	1.7	7.39		3.40	.28	1.52	6.05	3.71	2.36	4.98	3.25 CM
					[illegible]							[illegible]

units = inches

GEOLOGICAL SURVEY

District ....

STATION: Scandard Gulch on Roan Plateau W470 YEAR: 78

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				0.57	0.15			0.22				.30
2				0.45								.31
3				0.05								.05
4	0.13											
5	0.10	0.09		0.14								.32
6	0.29				0.34							.27
7		0.12										.10
8		0.04			0.16							.03
9		0.11			0.11			0.10				
10	0.06	0.34									0.17	
11	0.05	0.30					0.29				1.35	
12											0.55	
13								0.15			0.30	
14								0.12				
15	0.23									0.07		
16	0.10			0.11								
17	0.11								0.05			.12
18	0.14				0.43				0.22			.45
19	0.03		0.05		0.04				0.11			.10
20										0.05		
21										0.05		
22	0.03		0.34		0.10					0.11		
23	0.46											
24	0.09		0.36							0.04		
25	0.05						0.15			0.02	0.45	
26	0.08										0.09	
27	0.05										0.04	
28							0.03				0.05	.05
29						0.29	0.44				0.03	.08
30				0.06							0.08	.11
31			0.28	X								.03
SUM	1.99			1.38	1.33	0.29	0.91	0.59	0.38	0.34	3.11	2.32
	4.88			3.51	3.38	1.03	3.22	1.50	.97	.86	7.9	5.89

units = inches

GEOLOGICAL SURVEY WU7

STATION: Scandard Gulch

YEAR: 79

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.03	0.10										
2												
3												
4												
5	0.12											
6	.14											
7	.08											
8												
9												
10												
11	.05											
12	[illegible]											
13												
14	0.05											
15	0.10											
16	0.25											
17	0.25											
18												
19												
20												
21												
22	0.10											
23												
24	0.03											
25	0.05											
26	0.10											
27	.0.03											
28												
29	0.12											
30	0.05											
31	0.05											
SUM	1.50											
	3.81											

1" = 2.54 cm

Inches

units = inches

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SEDIMENTS

Sediment Analysis

Suspended sediment and suspended sediment discharge data for the water year October 1977 to September 1978 are presented for the following USGS Stations:

Station	Data	Page No.
WU07	10/77 - 9/78	II A-184
WU22	10/77 - 9/78	II A-188
WU28	1/78 - 3/78	II A-192
WU36	7/78 - 9/78	II A-193
WU52	7/29/78	II A-194
WU58	10/77 - 9/78	II A-195
WU61	10/77 - 9/78	II A-199

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
APR							
01...	1530	88	5240	1250	71	--	--
03...	1743	44	2170	258	--	22	30
18...	1100	28	755	57	97	--	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
APR						
01...	--	--	--	--	--	--
03...	50	72	81	91	99	100
18...	--	--	--	--	--	--

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	2.9	42	.33	3.5	43	.41	4.8	---	1.1
2	2.9	67	.52	4.0	62	.67	4.9	---	1.2
3	2.9	32	.25	4.0	48	.52	5.0	---	1.2
4	2.2	21	.12	3.5	32	.30	5.0	---	1.2
5	1.5	34	.14	3.5	30	.28	4.5	---	1.2
6	1.8	38	.18	4.0	100	1.1	5.0	194	2.4
7	2.4	104	1.2	4.3	55	.64	5.3	162	2.2
8	1.5	55	.22	3.5	---	.60	5.0	154	2.2
9	1.5	100	.40	2.6	---	.35	5.0	286	5.1
10	1.5	125	.51	2.0	99	.53	5.6	168	2.3
11	1.6	48	.21	2.4	104	.67	5.6	112	1.7
12	1.6	36	.16	3.5	171	1.6	5.3	91	1.4
13	1.5	47	.19	4.0	187	2.0	5.3	188	2.7
14	1.6	72	.31	4.0	169	1.8	5.3	---	1.3
15	1.8	91	.44	4.0	108	1.2	5.3	224	3.2
16	2.2	110	.65	4.0	148	1.6	4.5	264	3.2
17	2.4	104	.67	3.8	172	1.8	4.3	---	.84
18	2.6	53	.37	3.1	152	1.3	5.0	220	3.0
19	2.6	58	.41	2.0	159	.86	4.8	264	3.4
20	2.9	56	.43	3.5	---	.60	4.0	314	3.6
21	2.9	64	.50	3.6	---	.62	4.2	---	8.2
22	3.1	92	.77	3.8	---	.69	4.5	---	.95
23	3.1	109	.91	3.8	---	.69	4.8	---	1.1
24	3.1	129	1.1	3.8	---	.69	4.8	410	5.3
25	3.1	82	.69	3.6	---	.62	4.8	346	4.5
26	3.1	106	.89	3.6	---	.62	4.5	297	3.6
27	3.1	60	.50	3.9	---	.76	4.8	328	4.2
28	2.9	47	.37	4.2	---	.82	4.3	318	3.7
29	2.9	31	.24	4.5	---	.95	4.8	233	3.0
30	2.9	32	.25	5.0	---	1.2	4.5	230	2.8
31	2.9	33	.26	---	---	---	4.8	305	4.0
TOTAL	75.0	---	14.19	109.0	---	26.49	150.3	---	85.59

GREEN RIVER BASIN

09306007 PICEANCE CREEK BELOW RIO BLANCO, CO--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	3.8	350	3.6	3.5	230	2.2	4.3	80	.93
2	5.0	325	4.4	3.5	260	2.5	4.8	150	1.9
3	4.5	250	3.0	3.5	270	2.6	4.0	1020	21
4	4.3	220	2.6	3.8	295	3.0	4.5	---	.95
5	4.0	365	3.9	3.8	340	3.5	4.3	---	.85
6	4.0	360	3.9	3.8	335	3.4	4.3	---	.85
7	3.5	255	2.4	3.8	180	1.8	4.3	---	.85
8	3.3	290	2.6	3.8	200	2.0	4.5	---	.95
9	3.5	235	2.2	3.5	230	2.2	4.5	170	2.1
10	3.5	210	2.0	3.3	260	2.3	4.3	205	2.4
11	3.5	360	3.4	3.3	205	1.8	4.0	175	1.9
12	3.5	495	4.7	3.5	180	1.7	4.3	225	2.6
13	3.1	210	1.8	3.5	170	1.6	4.3	248	2.9
14	3.3	180	1.6	3.5	155	1.5	4.0	---	.75
15	3.5	205	1.9	3.1	---	.48	3.8	---	.69
16	3.3	200	1.8	3.1	---	.48	3.5	197	3.7
17	3.3	---	.51	3.2	---	.51	4.3	---	.85
18	3.5	50	.47	3.2	---	.51	5.0	---	1.2
19	3.3	75	.67	3.3	---	.51	5.9	---	1.7
20	3.3	150	1.3	3.3	---	.51	6.2	340	5.7
21	3.1	105	.88	3.3	---	.51	7.1	385	7.4
22	3.3	55	.49	3.1	230	1.9	7.1	430	8.2
23	3.3	135	1.2	2.9	190	1.5	7.7	390	8.1
24	3.1	100	.84	4.5	242	4.8	8.0	420	9.1
25	2.9	291	5.1	3.5	195	1.8	7.4	380	7.6
26	3.5	365	3.4	3.5	170	1.6	7.7	320	6.6
27	3.3	140	1.2	3.8	180	1.8	8.0	270	5.8
28	3.3	85	.76	4.0	200	2.2	11	1760	60
29	3.8	235	4.4	---	---	---	20	3500	189
30	3.5	185	1.8	---	---	---	31	6410	665
31	3.5	175	1.6	---	---	---	49	3150	417
TOTAL	109.6	---	70.42	97.9	---	51.21	253.1	---	1438.57

GREEN RIVER BASIN

09306007 PICEANCE CREEK BELOW RIO BLANCO, CO--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	79	9250	1950	37	2000	200	10	110	3.0
2	66	---	750	38	1850	190	9.9	70	1.9
3	52	---	400	44	3470	412	8.9	125	5.6
4	37	4050	404	44	3610	429	8.6	125	2.9
5	50	---	350	46	950	118	9.9	270	7.2
6	33	---	110	41	712	79	58	210	3.3
7	33	3000	267	33	---	110	22	125	7.4
8	38	4100	421	31	760	64	15	57	2.3
9	36	---	115	32	998	86	12	90	2.9
10	36	---	115	26	902	63	11	83	2.5
11	32	---	100	22	760	45	7.1	52	1.0
12	32	4250	367	22	712	42	7.4	33	.66
13	32	2900	250	21	760	43	7.7	56	1.2
14	30	2550	206	20	760	41	5.6	60	.91
15	30	2450	198	23	869	54	5.0	48	.6[illegible]
16	25	3100	209	26	888	62	3.3	31	.28
17	27	2800	204	30	898	73	3.5	26	.24
18	26	2090	147	28	722	54	3.3	30	.27
19	22	1660	986	22	532	32	4.0	48	.52
20	20	1380	74	18	447	22	5.3	46	.66
21	20	1420	77	20	432	23	5.3	50	.72
22	16	902	39	22	518	31	4.5	---	.95
23	14	808	30	21	446	25	3.5	---	.60
24	14	712	27	21	446	25	3.5	---	.60
25	14	665	25	20	350	19	3.8	---	.69
26	15	1140	46	20	240	13	4.8	32	.41
27	20	1420	77	22	300	18	9.2	---	4.2
28	19	1140	58	22	265	16	11	100	3.0
29	21	1380	78	23	380	24	11	86	2.6
30	28	---	70	24	230	15	12	---	2.6
31	---	---	---	15	155	6.3	---	---	---
TOTAL	917	---	8150	834	---	2434.3	286.1	---	61.76

GREEN RIVER BASIN

09306007 PICEANCE CREEK BELOW RIO BLANCO, CO--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY
		JULY			AUGUST			SEPTEMBER	
1	11	82	2.4	7.7	11	.23	6.2	12	.20
2	10	---	5.2	8.3	10	.22	6.5	7	.12
3	8.3	---	3.5	8.6	---	3.6	6.8	15	.28
4	6.2	---	1.8	8.9	---	4.0	7.1	30	.58
5	6.8	58	1.1	8.9	---	4.0	6.5	34	.60
6	7.1	60	1.2	8.9	---	4.0	6.2	22	.37
7	6.5	---	2.0	8.6	10	.22	6.2	17	.28
8	4.5	38	.46	8.6	11	.26	6.2	20	.33
9	4.8	---	1.1	13	18	.63	6.2	---	1.8
10	5.0	---	1.2	12	25	.25	6.2	---	1.8
11	6.8	48	.88	11	27	.80	6.5	---	7.0
12	5.3	46	.66	11	---	6.6	6.8	---	2.2
13	2.6	10	.07	11	---	6.6	6.8	7	.13
14	2.2	30	.18	11	40	1.2	6.8	---	2.2
15	2.6	---	.35	10	22	.59	6.8	---	2.2
16	3.5	---	.60	9.6	26	.67	6.8	---	2.2
17	6.2	---	1.8	9.6	24	.62	7.1	---	2.4
18	8.9	45	1.1	9.6	---	4.8	7.7	34	.71
19	9.6	40	1.0	9.6	24	.39	6.5	---	2.0
20	9.9	34	.91	9.2	15	.37	7.7	---	2.9
21	9.2	37	.92	8.9	14	.34	7.7	---	2.9
22	8.3	---	3.3	9.6	10	.26	7.7	---	2.4
23	8.9	---	4.0	9.2	13	.32	6.5	---	2.0
24	9.2	31	.77	8.9	11	.26	7.1	---	2.4
25	8.6	40	.93	8.9	14	.34	8.6	---	3.7
26	8.0	30	.65	8.0	24	.52	8.6	70	1.6
27	7.7	31	.64	6.8	---	2.2	8.6	---	3.7
28	7.4	29	.58	7.1	30	.58	8.0	---	3.2
29	8.0	---	3.2	6.8	17	.31	3.5	---	.60
30	7.1	---	2.4	6.2	12	.20	3.3	---	.51
31	6.8	---	2.1	5.9	10	.16	---	---	---
TOTAL	217.0	---	47.00	281.4	---	45.54	203.2	---	53.31
YEAR	3533.6		12478.38						

GREEN RIVER BASIN

09306022 STEWART GULCH ABOVE WEST FORK, NEAR RIO BLANCO, CO--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	1.0	10	.03	1.3	---	.14	1.6	---	.10
2	1.0	12	.03	1.3	48	.17	1.6	---	.10
3	1.0	8	.02	1.3	---	.18	1.6	---	.15
4	1.0	4	.01	1.4	54	.20	1.6	---	.15
5	1.1	10	.03	1.4	27	.10	1.6	---	.15
6	1.2	9	.03	1.5	25	.10	1.6	42	.18
7	1.2	4	.01	1.4	14	.05	1.6	75	.32
8	1.1	12	.04	1.4	18	.07	1.5	140	.57
9	1.1	11	.03	1.3	---	.07	1.5	29	.12
10	1.1	14	.04	1.2	---	.06	1.5	19	.08
11	1.1	12	.04	1.3	---	.07	1.5	26	[illegible]
12	1.2	3	.01	1.3	---	.07	1.5	17	[illegible]
13	1.1	8	.02	1.3	---	.07	1.6	116	[illegible]
14	1.1	5	.01	1.4	---	.09	1.6	114	.49
15	1.1	25	.07	1.4	---	.09	1.6	220	.95
16	1.1	8	.02	1.3	24	.08	1.6	232	1.0
17	1.2	6	.02	1.3	30	.11	1.6	250	1.1
18	1.2	7	.02	1.4	25	.09	1.6	170	.73
19	1.2	---	.03	1.4	7	.03	1.6	152	.66
20	1.2	---	.03	1.4	30	.11	1.6	275	1.2
21	1.3	10	.04	1.5	28	.11	1.6	---	1.0
22	1.3	---	.04	1.5	72	.29	1.6	---	.95
23	1.3	47	.16	1.5	71	.29	1.5	---	.80
24	1.3	10	.04	1.5	124	.50	1.5	---	.80
25	1.3	15	.05	1.5	191	.77	1.4	---	.75
26	1.4	21	.08	1.5	136	.55	1.4	---	.75
27	1.3	5	.02	1.5	121	.49	1.4	---	.75
28	1.4	---	.06	1.6	27	.12	1.5	---	.80
29	1.4	26	.10	1.6	18	.08	1.5	---	.80
30	1.4	---	.11	1.6	17	.07	1.5	---	.80
31	1.4	---	.13	---	---	---	1.5	---	.80
TOTAL	37.1	---	1.37	42.3	---	5.22	47.9	---	17.73

GREEN RIVER BASIN

09306022 STEWART GULCH ABOVE WEST FORK, NEAR RIO BLANCO, CO--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	1.5	---	.80	1.7	---	.45	1.4	90	.34
2	1.5	195	.79	1.7	71	.33	1.3	200	.70
3	1.5	---	.80	1.7	102	.47	1.2	155	.50
4	1.6	---	.90	1.7	59	.27	1.4	200	.76
5	1.7	---	1.0	1.7	116	.53	1.3	130	.46
6	1.7	---	.90	1.7	203	.93	1.2	75	.24
7	1.7	---	.85	1.7	148	.68	1.3	110	.39
8	1.7	---	.75	1.6	71	.31	1.3	135	.47
9	1.7	---	.65	1.6	35	.15	1.3	140	.49
10	1.7	---	.55	1.6	55	.24	1.2	125	.41
11	1.7	---	.45	1.6	41	.18	1.2	109	.35
12	1.6	88	.38	1.6	130	.56	1.3	84	.29
13	1.5	---	.30	1.6	107	.46	1.4	---	.70
14	1.5	---	.25	1.6	58	.25	1.5	---	.80
15	1.6	---	.30	1.6	93	.40	1.5	---	.75
16	1.6	---	.15	1.6	192	.83	1.5	164	.66
17	1.6	28	.12	1.5	65	.26	1.6	157	.68
18	1.6	46	.20	1.5	68	.28	1.5	132	.53
19	1.6	41	.18	1.5	45	.18	1.6	160	.69
20	1.6	88	.38	1.5	62	.25	1.4	160	.60
21	1.6	99	.43	1.5	84	.34	1.4	205	.77
22	1.6	60	.26	1.5	69	.28	1.5	205	.83
23	1.7	189	.87	1.5	---	.55	1.5	175	.71
24	1.7	121	.56	1.5	210	.85	1.5	195	.79
25	1.6	70	.30	1.5	241	.98	1.6	150	.65
26	1.6	---	.35	1.3	208	.73	1.5	108	.44
27	1.7	84	.39	1.4	140	.53	1.5	127	.51
28	1.7	106	.49	1.4	91	.34	1.5	162	.66
29	1.7	43	.20	---	---	---	1.6	212	.92
30	1.7	57	.26	---	---	---	1.6	229	.99
31	1.7	103	.47	---	---	---	1.6	190	.82
TOTAL	50.5	---	15.28	43.9	---	12.61	44.2	---	18.90

GREEN RIVER BASIN

09306022 STEWART GULCH ABOVE WEST FORK, NEAR RIO BLANCO, CO--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	1.6	133	.57	1.4	78	.29	1.2	60	.19
2	1.7	148	.68	1.4	72	.27	1.1	15	.04
3	1.7	140	.64	1.5	56	.23	1.2	6	.02
4	1.6	128	.55	1.4	92	.35	1.1	10	.03
5	1.6	106	.46	1.4	59	.22	1.1	26	.08
6	1.7	75	.34	1.4	26	.10	1.0	43	.12
7	1.6	70	.30	1.4	30	.11	1.0	27	.07
8	1.5	127	.51	1.4	35	.13	1.0	59	.16
9	1.5	---	.45	1.4	48	.18	1.1	22	.07
10	1.5	82	.33	1.3	76	.27	1.1	38	.1[illegible]
11	1.4	89	.34	1.3	39	.14	1.1	62	.16
12	1.4	110	.42	1.2	57	.18	1.1	18	.05
13	1.4	69	.26	1.2	52	.17	1.1	64	.19
14	1.2	103	.33	1.2	21	.07	1.0	31	.08
15	1.3	92	.32	1.2	18	.06	1.0	63	.17
16	1.3	73	.26	1.2	22	.07	.93	23	.06
17	1.3	62	.22	1.2	34	.11	1.0	45	.12
18	1.3	42	.15	1.2	39	.13	1.0	20	.05
19	1.2	44	.14	1.3	17	.06	1.1	49	.15
20	1.1	49	.15	1.3	22	.08	1.3	74	.26
21	1.2	72	.23	1.4	31	.12	.93	34	.09
22	1.2	70	.23	1.4	16	.06	1.0	33	.09
23	1.2	70	.23	1.2	9	.03	1.0	54	.15
24	1.2	44	.14	1.3	8	.03	1.0	78	.21
25	1.3	51	.18	1.3	44	.15	1.3	28	.10
26	1.3	51	.18	1.3	24	.08	1.4	41	.15
27	1.3	76	.27	1.3	14	.05	1.5	53	.21
28	1.3	63	.22	1.3	11	.04	1.3	16	.06
29	1.4	33	.12	1.3	19	.07	1.2	17	.06
30	1.4	65	.25	1.3	22	.08	1.3	15	.05
31	---	---	---	1.2	22	.07	---	---	---
TOTAL	41.7	---	9.47	40.6	---	4.00	33.46	---	3.37

GREEN RIVER BASIN

09306022 STEWART GULCH ABOVE WEST FORK, NEAR RIO BLANCO, CO--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	1.4	18	.07	.08	---	.00	1.0	20	.05
2	1.4	31	.12	.07	---	.00	1.0	25	.07
3	1.4	21	.08	.10	---	.00	1.0	25	.07
4	1.2	13	.04	.13	---	.00	1.0	21	.06
5	1.1	13	.04	.17	---	.01	.82	37	.08
6	1.3	44	.15	.20	---	.01	.82	17	.04
7	1.1	34	.10	.20	---	.01	.82	65	.14
8	1.0	61	.16	.69	---	.09	.87	155	.36
9	1.0	45	.12	.82	44	.10	.87	72	.17
10	1.0	65	.18	.82	29	.06	.87	20	.05
11	.93	38	.10	.82	29	.06	.82	55	.12
12	.87	38	.09	.87	---	.06	.82	16	.04
13	.87	38	.09	1.0	---	.05	.76	61	.13
14	.76	49	.10	.93	---	.05	.76	43	.09
15	.76	46	.09	.93	---	.04	.72	30	.06
16	.66	55	.10	.93	11	.03	.72	92	.18
17	.62	90	.15	.93	---	.02	.82	103	.23
18	.57	60	.09	.93	---	.02	.82	46	.10
19	.57	44	.07	1.0	---	.04	.82	33	.07
20	.49	33	.04	1.0	---	.04	.87	36	.08
21	.49	36	.05	1.0	---	.04	.82	19	.04
22	.53	60	.09	1.0	---	.03	.82	15	.03
23	.57	43	.07	1.0	12	.03	.82	22	.05
24	.57	36	.06	.93	8	.02	.82	18	.04
25	.38	---	.03	1.0	7	.02	.82	24	.05
26	.07	36	.01	1.0	---	.02	.82	30	.07
27	.02	---	.00	1.0	---	.03	.82	57	.13
28	.01	---	.00	1.0	11	.03	.82	31	.07
29	.02	---	.00	1.0	16	.04	.82	33	.07
30	.02	---	.00	1.0	17	.05	.87	48	.11
31	.05	---	.00	1.0	15	.04	---	---	---
TOTAL	21.73	---	2.29	23.55	---	1.04	25.25	---	2.85
YEAR	452.19		94.13						

09306028 WEST FORK STEWART GULCH AT MOUTH, NEAR RIO BLANCO, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1974 to current year.
WATER TEMPERATURE: April 1974 to current year.
SUSPENDED-SEDIMENT DISCHARGE: April 1974 to current year.

INSTRUMENTATION.--Water-quality monitor since April 1974. Automatic pumping sediment sampler since April 1974.

REMARKS.--Flow occurred only on days shown.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily, 1,800 mg/L Sept. 3, 1977; no flow many days each year.
SEDIMENT LOADS: Maximum daily, 4.2 tons (3.8 t) Mar. 5, 1975; no flow many days each year.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily, 1,400 mg/L, estimated Mar. 7; no flow many days during year.
SEDIMENT LOADS: Maximum daily, 2.7 tons (2.4 t) estimated Mar. 7; no flow many days during year.

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	.00			.00		---	.00		.00
2	.00			.00		---	.00		.00
3	.00			.00		---	.02		.01
4	.00			.00		---	.00		.00
5	.00			.00		---	.00		.00
6	.00			.00		---	.04		.02
7	.00			.00		---	.72		2.7
8	.00			.00		---	.17		.19
9	.00			.00		---	.12		.11
10	.00			.00		---	.06		.04
11	.00			.00		---	.00		.00
12	.00			.00		---	.00		.00
13	.00			.00		---	.00		.00
14	.00			.00		---	.00		.00
15	.00			.00		---	.00		.00
16	.00			.00		---	.00		.00
17	.00			.00		---	.03		.02
18	.00			.00		---	.09		.07
19	.00			.00		---	.28		.42
20	.00			.00		---	.39		.82
21	.00			.00		---	.15		.15
22	.00			.00		---	.01		.01
23	.00			.00		---	.01		.01
24	.00			.00		---	.00		.00
25	.00			.00		---	.00		.00
26	.00			.00		---	.00		.00
27	.00			.25		.15	.00		.00
28	.00			.04		.01	.00		.00
29	.00			---			.00		.00
30	.00			---			.00		.00
31	.00			---			.00		.00
TOTAL	0.00			0.29		0.16	2.09		4.57

GREEN RIVER BASIN

09306036 SORGHUM GULCH AT MOUTH, NEAR RIO BLANCO, CO--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	.00			.72		14	.00		
2	.00			.35		4.5	.00		
3	.00			.00		---	.00		
4	.00			.00		---	.00		
5	.00			.00		---	.00		
6	.00			.00		---	.00		
7	.00			.00		---	.00		
8	.00			.00		---	.00		
9	.00			.00		---	.00		
10	.00			.00		---	.00		
11	.00			.00		---	.00		
12	.00			.00		---	.00		
13	.00			.00		---	.00		
14	.00			.00		---	.00		
15	.00			.00		---	.00		
16	.00			.00		---	.00		
17	.00			.00		---	.00		
18	.00			.00		---	.00		
19	.00			.00		---	.00		
20	.00			.00		---	.00		
21	.00			.00		---	.00		
22	.00			.00		---	.00		
23	.00			.00		---	.00		
24	.00			.00		---	.00		
25	.00			.00		---	.00		
26	.00			.00		---	.00		
27	.00			.00		---	.00		
28	.00			.00		---	.00		
29	.00			.00		---	.00		
30	.00			.00		---	.00		
31	.00			.00		---	---		
TOTAL	0.00			1.07		18.5	0.00		
YEAR	1.07		18.5						

09306052 SCANDARD GULCH AT MOUTH, NEAR RIO BLANCO, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1974 to current year.
WATER TEMPERATURE: April 1974 to current year.
SUSPENDED SEDIMENT DISCHARGE: April 1974 to current year.

INSTRUMENTATION.--Water-quality monitor since April 1974. Automatic pumping sediment sampler since April 1974.

REMARKS.--Flow occurred only on days shown.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 425 micromhos Mar. 18, 1976; minimum, 147 micromhos July 29, 1978.
WATER TEMPERATURES: Maximum, 22.0°C July 29, 1978; minimum, 0.5°C Feb. 11, 12, 1976.
SEDIMENT CONCENTRATIONS: Maximum daily, 49,000 mg/L July 29, 1978; no flow many days each year.
SEDIMENT LOADS: Maximum daily, 50 tons (45 t) estimated July 29, 1978.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 169 micromhos July 29; minimum, 147 micromhos July 29.
WATER TEMPERATURES: Maximum, 22°C July 29; minimum, 19°C July 29.
SEDIMENT CONCENTRATIONS: 49,000 mg/L estimated July 29.
SEDIMENT LOAD: 50 tons (45 t) estimated July 29.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

JULY 29 158

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

JULY 29 MAX 22.0 MIN 19.0

SUSPENDED-SEDIMENT DISCHARGE (TON/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY	
29	0.38	49,000	50
YEAR	0.38		50

GREEN RIVER BASIN

09306058 WILLOW CREEK NEAR RIO BLANCO, CO--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	1.2	---	.09	1.2	68	.22	1.5	38	.15
2	1.2	---	.06	1.2	44	.14	1.5	105	.42
3	1.2	28	.09	1.2	33	.11	1.5	95	.38
4	1.2	64	.21	1.2	38	.12	1.5	90	.37
5	1.2	47	.15	1.2	53	.17	1.5	105	.42
6	1.3	57	.20	1.3	52	.18	1.5	142	.58
7	1.3	57	.20	1.3	---	.18	1.5	124	.50
8	1.2	60	.19	1.3	50	.18	1.5	95	.38
9	1.2	65	.21	1.3	---	.20	1.5	62	.25
10	1.2	66	.21	1.3	---	.20	1.5	114	.46
11	1.2	---	.20	1.3	---	.20	1.5	67	.27
12	1.3	---	.20	1.3	---	.20	1.5	65	.26
13	1.3	---	.20	1.3	---	.20	1.7	72	.33
14	1.3	---	.20	1.3	---	.20	1.4	---	.20
15	1.2	---	.15	1.3	67	.24	1.3	---	.20
16	1.2	---	.15	1.3	---	.20	1.3	---	.20
17	1.2	---	.10	1.3	---	.20	1.3	---	.20
18	1.3	---	.10	1.4	---	.25	1.3	---	.20
19	1.3	---	.10	1.4	---	.25	1.3	---	.20
20	1.3	---	.10	1.4	---	.25	1.3	---	.20
21	1.2	20	.06	1.5	---	.30	1.4	---	.20
22	1.2	16	.05	1.5	90	.36	1.4	---	.20
23	1.2	20	.06	1.2	110	.36	1.4	---	.20
24	1.2	22	.07	1.2	---	.20	1.4	---	.20
25	1.2	25	.08	1.2	47	.15	1.4	---	.20
26	1.1	33	.10	1.4	165	.62	1.4	---	.20
27	1.1	44	.14	1.4	200	.76	1.4	---	.20
28	1.2	33	.11	1.5	88	.36	1.4	---	.20
29	1.2	28	.09	1.4	57	.22	1.5	---	.25
30	1.2	26	.08	1.4	90	.34	1.6	---	.30
31	1.2	30	.10	---	---	---	1.6	---	.30
TOTAL	37.8	---	4.05	39.5	---	7.56	44.8	---	8.62

GREEN RIVER BASIN

09306058 WILLOW CREEK NEAR RIO BLANCO, CO--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	1.5	---	.30	1.3	124	.44	.00	0	.00
2	1.5	---	.30	1.2	100	.32	.00	0	.00
3	1.4	---	.30	1.9	337	1.7	.05	---	.00
4	1.4	---	.30	2.0	513	2.8	1.6	712	3.1
5	1.5	81	.33	2.1	551	3.1	1.8	285	1.4
6	1.5	76	.31	1.9	390	2.0	1.8	214	1.0
7	1.2	57	.18	1.8	154	.75	1.9	---	1.3
8	1.0	65	.17	1.7	135	.62	1.9	294	1.5
9	.91	43	.11	2.0	171	.92	2.0	238	1.3
10	.65	66	.12	1.8	---	.70	.47	---	.04
11	.65	104	.18	1.7	138	.63	.00	0	.00
12	.76	247	.51	1.4	114	.43	.00	0	.00
13	.87	228	.54	1.9	65	.33	.00	0	.00
14	.92	180	.45	1.7	81	.37	.00	0	.00
15	1.3	180	.63	1.8	100	.48	.44	---	.15
16	1.2	162	.52	1.7	104	.48	.97	998	2.6
17	.71	142	.27	2.2	154	.91	.57	950	1.5
18	.55	47	.07	2.4	242	1.6	1.7	960	4.4
19	.85	171	.39	2.1	293	1.7	1.8	167	.78
20	1.1	100	.30	1.8	347	1.7	1.9	233	1.2
21	.92	85	.21	1.7	361	1.7	1.9	276	1.4
22	1.1	104	.31	2.1	409	2.3	1.9	237	1.2
23	.99	81	.22	2.1	247	1.4	1.8	242	1.2
24	1.2	86	.28	1.0	76	.21	1.8	247	1.2
25	1.4	61	.23	.09	---	.01	1.7	152	.70
26	1.6	48	.21	.11	---	.01	1.7	190	.87
27	1.6	57	.25	.00	0	.00	1.7	---	.90
28	1.6	124	.53	.00	0	.00	1.1	207	.62
29	1.5	48	.19	---	---	---	1.1	142	.42
30	1.4	106	.40	---	---	---	1.1	142	.42
31	1.4	125	.47	---	---	---	1.1	170	.51
TOTAL	36.18	---	9.58	43.50	---	27.61	35.80	---	29.71

GREEN RIVER BASIN

09306058 WILLOW CREEK NEAR RIO BLANCO, CO--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	1.2	171	.55	1.1	49	.15	.57	356	.55
2	1.2	133	.43	1.0	52	.14	.62	89	.15
3	1.2	157	.51	1.5	55	.22	.59	33	.05
4	1.1	290	.86	1.3	90	.32	.59	43	.07
5	1.1	176	.52	1.4	147	.56	.84	62	.14
6	1.2	214	.69	.97	---	.35	.85	190	.44
7	1.2	133	.43	1.2	---	.50	.87	125	.29
8	1.7	162	.74	1.3	166	.58	.99	133	.36
9	1.8	135	.66	.57	---	.10	.92	176	.44
10	1.8	160	.78	.00	---	.00	.87	116	.27
11	1.7	157	.72	.00	---	.00	.83	185	.42
12	1.7	169	.78	.00	---	.00	.70	104	.20
13	1.6	176	.76	.00	---	.00	.52	138	.19
14	1.5	147	.60	.00	---	.00	.46	152	.19
15	1.4	399	1.5	.00	---	.00	.50	33	.04
16	1.3	266	.93	.00	---	.00	.57	33	.05
17	1.4	180	.68	.00	---	.00	.57	38	.06
18	1.4	201	.76	.00	---	.00	.62	43	.07
19	1.6	109	.47	.00	---	.00	.64	33	.06
20	1.5	100	.40	.00	---	.00	.63	38	.06
21	1.6	176	.76	.00	---	.00	.60	67	.11
22	1.5	109	.44	.00	---	.00	.59	57	.09
23	1.4	195	.74	.00	---	.00	.58	84	.13
24	.81	62	.14	.00	---	.00	.56	52	.08
25	.39	48	.05	.00	---	.00	.62	33	.06
26	.81	71	.16	.00	---	.00	.68	48	.09
27	1.3	62	.22	.00	---	.00	.73	46	.09
28	1.2	87	.28	.00	---	.00	.78	90	.19
29	1.1	93	.28	.31	---	.02	.96	230	.60
30	1.1	62	.18	.50	---	.20	.90	166	.40
31	---	---	---	.76	166	.34	---	---	---
TOTAL	39.81	---	17.02	11.91	---	3.48	20.75	---	5.94

GREEN RIVER BASIN

09306058 WILLOW CREEK NEAR RIO BLANCO, CO--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	1.0	204	.55	.47	62	.08	.61	24	.04
2	1.0	166	.45	.42	24	.03	.18	20	.01
3	.90	261	.63	.30	24	.02	.27	38	.03
4	.82	294	.65	.30	24	.02	.27	43	.03
5	.90	204	.50	.28	19	.01	.31	19	.02
6	.72	124	.24	.28	14	.01	.33	---	.02
7	.93	223	.56	.26	19	.01	.35	---	.03
8	.75	214	.43	.26	14	.01	.39	41	.04
9	.70	95	.18	.24	26	.02	.40	33	.04
10	.78	100	.21	.24	10	.01	.44	14	.02
11	.78	81	.17	.34	14	.01	.47	17	.02
12	.48	33	.04	.35	15	.01	.51	20	.03
13	.47	38	.05	.34	24	.02	.57	32	.05
14	.50	---	.05	.40	10	.01	.57	47	.07
15	.47	38	.05	.34	6	.01	.54	44	.06
16	.50	52	.07	.42	10	.01	.51	41	.06
17	.57	57	.09	.37	27	.03	.52	33	.05
18	.57	52	.08	.27	37	.03	.65	17	.03
19	.57	62	.10	.36	28	.03	.71	25	.05
20	.55	81	.12	.44	---	.03	.83	29	.07
21	.50	114	.15	.42	25	.03	.77	29	.06
22	.52	119	.17	.42	32	.04	.66	25	.04
23	.42	100	.11	.40	31	.03	.68	30	.06
24	.44	52	.06	.39	54	.06	.65	28	.05
25	.50	62	.08	.41	35	.04	.60	38	.06
26	.55	100	.15	.36	29	.03	.59	51	.08
27	.44	57	.07	.36	22	.02	.60	37	.06
28	.66	---	.10	.44	28	.03	.59	25	.04
29	1.1	76	.23	.65	20	.04	.59	24	.04
30	.47	33	.04	.64	22	.04	.65	---	.04
31	.44	95	.11	.64	25	.04	---	---	---
TOTAL	20.00	---	6.49	11.81	---	0.81	15.81	---	1.30
YEAR	357.67		122.17						

GREEN RIVER BASIN

09306061 PICEANCE CREEK ABOVE HUNTER CREEK, NEAR RIO BLANCO, CO--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	3.1	33	.28	5.7	20	.31	8.9	---	2.5
2	2.8	28	.21	5.6	47	.71	11	---	4.5
3	.50	23	.03	5.3	53	.75	10	---	3.5
4	.00	---	.00	5.0	59	.79	10	---	3.5
5	.00	---	.00	4.4	28	.34	10	---	3.5
6	.59	73	.16	4.3	20	.23	10	---	3.5
7	1.1	57	.17	4.0	29	.31	10	---	3.5
8	1.2	56	.19	3.8	23	.24	11	---	4.5
9	1.6	72	.32	2.9	---	.10	14	187	8.8
10	2.1	72	.40	2.9	---	.07	12	---	3.2
11	2.1	63	.36	3.3	64	.57	12	---	2.8
12	2.0	68	.37	3.2	81	.71	12	79	2.6
13	.57	56	.10	3.5	630	5.9	11	148	4.4
14	.04	36	.00	3.7	59	.59	12	142	4.5
15	.37	22	.03	3.8	49	.50	12	278	8.8
16	1.8	32	.17	3.6	73	.71	12	232	7.8
17	2.6	43	.30	4.1	94	1.0	13	---	8.0
18	3.8	23	.24	4.9	72	.96	13	---	8.0
19	4.0	22	.24	4.2	88	1.0	12	---	7.5
20	4.3	23	.27	9.4	122	3.8	12	---	7.5
21	6.4	---	.30	12	229	8.0	13	---	8.0
22	6.3	---	.65	7.9	144	3.1	13	---	8.0
23	5.7	43	.66	7.6	155	3.3	9.8	215	5.7
24	6.2	49	.82	11	187	5.3	8.4	183	4.2
25	5.5	27	.40	11	154	4.5	7.6	216	4.4
26	6.6	13	.23	7.6	138	2.9	7.8	204	4.3
27	4.9	18	.24	7.3	120	2.4	8.2	193	4.3
28	5.1	40	.56	7.2	133	2.6	8.0	161	3.5
29	5.3	15	.22	7.4	96	1.9	8.7	103	2.4
30	5.6	19	.31	8.4	---	2.0	9.1	101	2.5
31	5.9	22	.35	---	---	---	9.2	121	3.0
TOTAL	98.07	---	8.58	175.0	---	55.59	330.7	---	153.2

GREEN RIVER BASIN

09306061 PICEANCE CREEK ABOVE HUNTER CREEK, NEAR RIO BLANCO, CO--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	10	218	5.9	10	140	3.9	9.3	---	3.0
2	9.6	298	7.7	12	224	8.9	10	---	3.5
3	9.5	250	6.4	17	285	22	10	---	3.5
4	9.7	222	5.8	12	200	7.4	14	---	8.5
5	9.6	160	4.2	10	177	5.3	9.3	---	3.0
6	9.4	184	4.7	9.4	143	3.7	10	---	3.5
7	10	186	5.4	9.5	166	4.3	11	---	4.5
8	10	194	5.2	8.7	139	3.3	11	---	4.5
9	9.8	158	4.3	7.7	141	2.9	12	---	6.0
10	10	---	4.0	7.6	121	2.5	12	195	6.1
11	11	---	4.0	7.8	125	2.6	11	222	6.9
12	11	124	3.6	8.0	128	2.8	11	271	8.2
13	11	---	3.5	8.0	101	2.2	11	267	8.7
14	11	---	3.5	8.4	106	2.4	12	245	7.[illegible]
15	11	---	3.0	8.8	168	4.1	13	449	26
16	11	93	2.8	9.0	136	3.3	17	444	14
17	11	88	2.6	13	210	8.1	11	404	12
18	11	64	1.9	19	233	13	12	225	8.2
19	10	141	3.9	18	279	20	14	142	5.0
20	9.9	86	2.3	9.6	122	3.2	16	257	12
21	9.5	80	2.1	9.4	125	3.2	16	292	13
22	9.2	111	2.8	12	243	9.3	16	294	13
23	9.4	64	1.6	11	219	8.0	17	291	13
24	12	146	5.0	10	202	6.5	18	303	14
25	25	150	12	9.0	165	4.0	17	284	13
26	9.6	69	1.8	9.6	163	4.2	17	290	13
27	9.5	30	.77	9.9	---	3.5	16	260	11
28	15	256	13	9.5	---	3.0	17	267	12
29	9.9	153	4.1	---	---	---	25	760	52
30	9.6	76	2.0	---	---	---	32	2780	241
31	10	111	3.2	---	---	---	43	3750	466
TOTAL	334.2	---	133.07	293.9	---	167.6	470.6	---	1015.5

GREEN RIVER BASIN

09306061 PICEANCE CREEK ABOVE HUNTER CREEK, NEAR RIO BLANCO, CO--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	56	4110	637	24	1110	72	15	---	10
2	53	3390	510	24	753	48	19	---	13
3	41	---	320	26	1080	78	19	---	13
4	32	2230	188	34	1290	118	20	---	15
5	39	2730	293	31	1530	126	24	---	30
6	31	---	90	27	1480	108	60	2560	858
7	33	1420	132	26	1350	96	18	344	20
8	30	408	32	26	1210	83	6.8	176	3.2
9	29	2450	195	25	1240	86	5.7	129	2.0
10	30	1770	142	22	735	43	4.5	100	1.2
11	28	1610	122	20	643	35	3.7	81	.81
12	27	1860	135	20	476	26	8.5	91	2.1
13	27	1810	135	16	311	13	8.1	106	2.3
14	27	---	130	14	520	20	4.1	67	.74
15	26	---	130	17	636	30	3.8	67	.68
16	25	---	100	18	670	32	1.0	56	.16
17	25	---	100	17	599	28	1.4	37	.14
18	25	---	100	18	463	23	1.5	37	.15
19	25	---	100	17	438	19	1.5	33	.13
20	23	---	90	15	470	19	1.0	33	.09
21	23	1430	88	18	393	19	2.4	70	.51
22	21	1290	74	22	404	24	5.0	83	1.1
23	18	1620	80	19	801	41	4.8	71	.91
24	16	1770	77	17	---	30	5.0	---	.95
25	12	1560	51	19	---	40	3.6	71	.69
26	13	1410	50	17	---	30	5.7	82	1.3
27	14	1150	46	16	626	27	9.5	110	2.8
28	9.0	818	20	17	757	35	9.0	130	3.2
29	12	1030	33	19	698	35	13	140	4.8
30	18	1270	61	15	368	15	15	158	6.4
31	---	---	---	12	90	2.9	---	---	---
TOTAL	788.0	---	4261	628	---	1401.9	299.6	---	995.36

09306061 PICEANCE CREEK ABOVE HUNTER CREEK, NEAR RIO BLANCO, CO--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	14	180	6.8	7.4	67	1.3	2.6	---	.15
2	13	---	10	8.7	33	.77	2.5	---	.16
3	10	---	8.0	8.2	26	.57	2.2	---	.14
4	6.6	170	3.0	9.0	---	.58	2.3	---	.16
5	6.0	165	2.7	10	23	.62	3.3	25	.23
6	5.5	173	2.6	10	26	.72	4.0	21	.23
7	4.8	96	1.2	9.8	---	.64	4.5	24	.29
8	2.4	---	.50	9.6	20	.51	4.9	21	.28
9	1.1	84	.25	7.4	10	.20	4.9	25	.33
10	1.3	79	.28	11	42	1.2	5.4	35	.51
11	1.9	58	.30	10	---	.85	5.8	40	.63
12	3.4	---	.45	5.6	31	.48	7.0	57	1.1
13	2.3	44	.28	4.0	21	.23	6.4	59	1.0
14	1.0	41	.12	6.0	14	.23	6.7	72	1.3
15	.21	68	.04	5.9	10	.15	6.5	---	1.0
16	.17	---	.04	5.7	10	.16	6.1	---	1.0
17	.15	92	.04	5.7	14	.21	6.1	---	1.0
18	11	207	6.4	4.8	14	.18	6.5	65	1.2
19	12	194	6.4	3.0	---	.12	4.5	55	.67
20	13	186	6.4	2.8	---	.12	4.9	46	.61
21	8.6	173	4.2	3.1	17	.14	5.6	50	.75
22	12	190	6.3	4.1	11	.12	5.8	21	.34
23	12	91	3.1	4.5	6	.07	6.0	51	.81
24	12	---	2.0	5.1	---	.15	5.5	44	.65
25	11	57	1.6	6.8	10	.19	7.0	38	.72
26	9.5	64	1.7	3.4	10	.09	9.8	28	.75
27	8.1	63	1.4	2.9	13	.10	10	28	.77
28	7.9	82	1.8	3.0	---	.12	7.6	22	.47
29	8.0	62	1.3	3.0	18	.15	5.2	---	.17
30	8.0	102	2.2	3.3	---	.16	4.8	17	.21
31	6.9	54	1.0	3.4	22	.20	---	---	---
TOTAL	213.83	---	82.40	187.2	---	11.33	164.4	---	17.63
YEAR	3983.50		8303.16						

SPRINGS AND SEEPS

II A-2 SPRINGS AND SEEPS

Water levels and water quality data were collected at nine springs around the tract. These were WS01, WS02, WS03, WS04, WS06, WS07, WS08, WS09, and WS10. Refer to Figure II A-4 for the location of these springs. Tables II A-3 and II A-4 summarize the data.

Table/Figure No.	Description	Page No.
Figure II A-4	Springs & Seeps	II A-205
Table II A-3	Flow of Springs on Tract C-b	II A-206
Table II A-4	Water Quality Parameters - Springs & Seeps (4 Pages)	II A-207

An attempt has been made to refer to all stations by their four-digit computer station codes. For additional information on these codes refer to Section IV.

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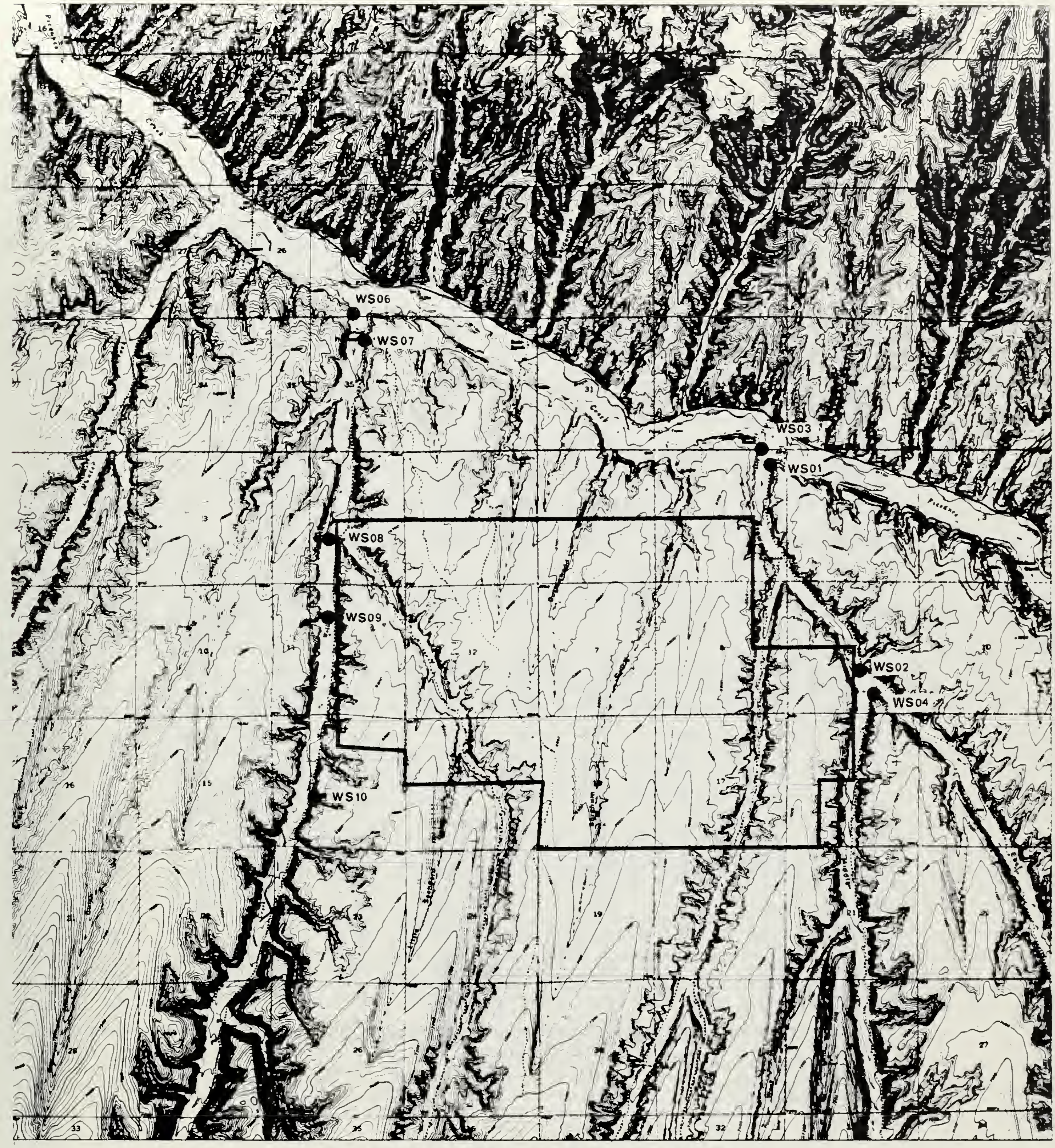

SPRINGS AND SEEPS AROUND
Cb TRACT

Figure II A-4

Table II A-3

FLOW OF SPRINGS ON TRACT C-b (cfs)

SEPTEMBER 1977 - APRIL 1979

DATE	SPRING								
	WS01	WS02	WS03	WS04	WS06	WS07	WS08	WS09	WS10
9/77	2.14	NF	.93	NF	.87	NF	NF	.187	.48
10/77	*	NF	*	NF	*	NF	NF	.196	.56
11/77	*	NF	4.50	NF	*	NF	NF	*	*
12/77	2.22	NF	<.66	NF	.45	NF	NF	.319	.85
1/78	*	NF	<.66	NF	.45	NF	NF	.319	1.32
2/78	*	*	*	*	*	*	*	*	*
3/78	2.14	NF	<.66	NF	.62	NF	NF	.240	.65
4/78	1.94	NF	<.66	NF	1.07	NF	NF	.231	.56
5/78	<.09	<.03	<.66	.56	1.81	NF	NF	.240	.56
6/78	*	.03	1.79	<.05	.52	NF	NF	.240	.60
7/78	*	<.03	*	.52	.47	NF	NF	.146	.58
8/78	.09	<.03	.93	.80	.48	NF	NF	.213	.41
9/78	1.51	<.03	<.66	1.25	.45	NF	NF	.170	.47
10/78	1.48	*	<.66	*	.43	NF	NF	.204	.45
11/78	2.44	.187	*	<.05	.41	NF	NF	.187	.45
12/78	*	*	*	*	*	*	*	*	*
1/79	2.35	.204	<.66	.05	.45	NF	DRY	.213	.48
2/79	*	*	*	*	*	*	*	*	*
3/9/79	3.3	.45	1.79	NF	.38	NF	DRY	.23	.41
3/29/79	FL	.45	.58	NF	.39	NF	DRY	.23	FL
4/4/79	*	*	.18	NF	.48	NF	DRY	.23	FL
4/16/79	3.4	.45	.58	NF	.48	NF	DRY	.23	.41
4/23/79	1.44	.45	.58	NF	.48	NF	NF	.23	.41

< = Less Than
NF= No Flume
*= Missing Data
FL= Flume Leaks

Table II A-4

CB-TRACT
WATER QUALITY PARAMETERS
SPRINGS & SEEPS
FOR SAMPLE DATA SHOWN

SPGS	YR	MO	SPEC COND (UMHOS)	PH	TOT ALK (MG/L CACO3)	HARDNESS (MG/L CACO3)	SOLUBLE SOLIDS (MG/L)	CHEM O2 DEMAND (MG/L)	BOD5 (MG/L)	OIL AND GREASE (MG/L)	DISS O2 (MG/L)	WATER TEMP (C)	TOC (MG/L)	LAS (MG/L)	N KJELD. (MG/L)
WS01	78	10	1300.0	7.6	420.0	460.0	1000.0	6.0	3.0	10.0	6.0	8.5	37.0	-.10	.8
	79	2	-.1	-.1	450.0	490.0	980.0	4.0	1.0	20.0	-.1	-.1	9.0	.04	2.0
WS02	78	6	1200.0	8.1	430.0	560.0	1000.0	.9	.9	.9	6.1	15.0	1.0	-.10	-.1
		10	1200.0	7.8	340.0	460.0	1000.0	2.0	.9	10.0	7.0	10.0	27.0	-.10	.4
	79	2	-.1	-.1	420.0	460.0	900.0	10.0	.9	9.0	-.1	-.1	2.0	.04	3.0
WS03	78	4	-.1	8.3	440.0	540.0	960.0	16.0	22.0	10.0	9.4	17.0	-.1	-.10	.3
		6	1350.0	8.0	400.0	430.0	750.0	.9	.9	9.0	8.6	16.0	20.0	-.10	-.1
		7	1250.0	8.2	460.0	550.0	4300.0	20.0	30.0	3.0	7.5	13.5	4.0	-.10	-.1
		10	1400.0	7.8	430.0	540.0	940.0	2.0	4.0	10.0	6.0	10.0	9.0	-.10	4.1
	79	2	-.1	-.1	450.0	540.0	1100.0	4.0	2.0	3.0	-.1	-.1	26.0	.04	3.0
WS04	78	6	1200.0	8.2	360.0	500.0	890.0	.9	.9	.9	7.5	15.0	1.0	-.10	-.1
		10	1100.0	8.0	320.0	460.0	900.0	6.0	30.0	10.0	5.0	12.0	16.0	-.10	.4
	79	2	-.1	-.1	420.0	350.0	880.0	.9	1.0	5.0	-.1	-.1	11.0	.04	2.0
WS06	78	6	1380.0	7.7	530.0	600.0	1100.0	.9	.9	.9	4.2	12.0	4.0	-.10	-.1
		10	1300.0	7.8	930.0	460.0	1100.0	8.0	6.0	20.0	5.0	11.0	17.0	-.10	.5
	79	2	-.1	-.1	500.0	520.0	1100.0	10.0	1.0	40.0	-.1	-.1	5.0	.04	3.0
WS07	78	4	-.1	7.9	500.0	640.0	1000.0	12.0	23.0	2.0	8.3	16.0	-.1	-.10	.3
		7	1400.0	7.7	510.0	610.0	4900.0	.9	30.0	3.0	5.5	12.0	1.0	-.10	-.1
		10	1400.0	7.7	490.0	540.0	1000.0	20.0	1.0	7.0	5.0	12.0	10.0	-.10	2.4
	79	2	-.1	-.1	490.0	540.0	1100.0	2.0	.9	45.0	-.1	-.1	10.0	.04	3.0
WS08	78	7	1320.0	7.4	480.0	570.0	4400.0	.9	10.0	.9	6.2	15.0	2.0	-.10	-.1
WS09	78	6	1350.0	7.8	480.0	440.0	1000.0	16.0	10.0	.9	7.0	16.0	9.0	-.10	-.1
		10	1300.0	7.7	400.0	520.0	1000.0	2.0	.9	10.0	5.0	10.0	25.0	-.10	.5
	79	2	-.1	-.1	500.0	570.0	1000.0	.9	3.0	3.0	-.1	-.1	14.0	.04	3.0
WS10	78	6	1250.0	7.9	463.0	360.0	710.0	28.0	57.0	13.0	11.2	14.0	5.0	-.10	-.1
		10	1200.0	7.6	340.0	530.0	1000.0	2.0	6.0	4.0	3.0	10.0	18.0	-.10	.4
	79	2	-.1	-.1	490.0	570.0	1000.0	2.0	.9	20.0	-.1	-.1	62.0	.04	1.0

NOTE: -.1 INDICATES NOT SAMPLED

Table II A- 4

CB-TRACT
WATER QUALITY PARAMETERS
SPRINGS & SEEPS
FOR SAMPLE DATE SHOWN

SPGS	YR	MO	MG (MG/L)	NO3 (MG/L)	K (MG/L)	NA (MG/L)	SO4 (MG/L)	HCO3 (MG/L CACO3)	CA (MG/L)	CO3 (MG/L CACO3)	CL (MG/L)	LI (MG/L)	AL (MG/L)	AS (MG/L)	BA (MG/L)
WS01	78	10	77.0	11.00	1.5	130.0	360.0	420.0	100.0	.9	8.2	.01	.080	.010	.40
	79	2	80.0	50.00	2.0	130.0	360.0	450.0	90.0	.9	8.0	.01	.200	.010	.40
WS02	78	6	65.0	4.40	2.2	130.0	320.0	420.0	82.0	10.0	8.0	.02	.300	.010	.40
		10	81.0	4.80	1.0	120.0	360.0	320.0	110.0	20.0	7.8	.01	.200	.010	.80
	79	2	73.0	8.00	.9	110.0	320.0	400.0	84.0	20.0	7.0	.01	.200	.010	.40
WS03	78	4	76.0	4.00	2.0	140.0	320.0	440.0	85.0	.9	8.0	.01	.050	.010	.40
		6	56.0	4.40	.6	120.0	430.0	370.0	72.0	30.0	6.0	.02	.300	.010	.40
		7	65.0	3.80	2.4	130.0	400.0	430.0	80.0	30.0	8.0	.02	.100	.010	.40
		10	81.0	23.00	1.7	130.0	890.0	410.0	89.0	20.0	7.0	.01	.030	.010	.40
	79	2	80.0	8.00	2.0	140.0	400.0	450.0	90.0	.9	8.0	.01	.090	.010	.40
WS04	78	6	57.0	3.80	.8	120.0	390.0	340.0	76.0	20.0	6.0	.02	.100	.010	.40
		10	66.0	12.00	1.0	120.0	150.0	300.0	94.0	20.0	7.0	.01	.100	.010	.60
	79	2	70.0	15.00	1.0	120.0	240.0	400.0	90.0	20.0	6.0	.01	.090	.010	.30
WS06	78	6	92.0	3.80	2.5	150.0	320.0	500.0	84.0	30.0	11.0	.02	.300	.010	.50
		10	80.0	2.30	1.8	130.0	320.0	900.0	97.0	30.0	11.0	.01	.100	.010	.40
	79	2	90.0	6.00	2.0	140.0	340.0	500.0	90.0	.9	11.0	.01	.200	.010	.40
WS07	78	4	88.0	2.00	2.0	140.0	320.0	500.0	100.0	.9	11.0	.02	.040	.010	.40
		7	70.0	1.80	2.1	130.0	330.0	460.0	110.0	50.0	11.0	.02	.100	.010	.50
		10	81.0	4.30	1.4	130.0	910.0	470.0	94.0	20.0	9.5	.01	.100	.020	.40
	79	2	80.0	3.00	2.0	130.0	370.0	490.0	90.0	.9	10.0	.01	.100	.010	.40
WS08	78	7	62.0	3.10	2.2	140.0	300.0	310.0	92.0	170.0	11.0	.02	.200	.010	.50
WS09	78	6	87.0	4.20	1.3	130.0	310.0	480.0	93.0	.9	10.0	.02	.400	.010	.40
		10	78.0	.09	1.2	120.0	290.0	380.0	110.0	20.0	10.0	.01	.040	.010	.59
	79	2	80.0	1.00	1.0	120.0	340.0	500.0	100.0	.9	11.0	.01	.200	.010	.40
WS10	78	6	13.0	4.00	1.3	120.0	380.0	459.0	89.0	4.0	8.0	.01	.100	.010	.40
		10	75.0	4.30	1.2	110.0	440.0	310.0	100.0	30.0	9.4	.01	.100	.010	.50
	79	2	70.0	2.00	1.0	110.0	330.0	490.0	95.0	.9	10.0	.01	.200	.010	.40

NOTE: -.1 INDICATES NOT SAMPLED

Table II A-4

CB-TRACT
WATER QUALITY PARAMETERS
SPRINGS & SEEPS
FOR SAMPLE DATE SHOWN

SPGS	YR	MO	B (MG/L)	CD (MG/L)	CR (MG/L)	CU (MG/L)	F (MG/L)	FE (MG/L)	PB (MG/L)	MN (MG/L)	NI (MG/L)	ZN (MG/L)	SR (MG/L)	AG (MG/L)	MO (MG/L)
WS01	78	10	.19	.010	.010	.010	.26	.40	.030	.010	.010	.030	7.0	-.100	.020
	79	2	.03	.010	.010	.010	.25	.70	.010	.030	.030	.030	5.0	.010	.010
WS02	78	6	.04	.010	.010	.090	.20	.40	.010	.090	.030	.090	5.0	-.100	.010
		10	.19	.010	.010	.010	.22	.40	.010	.010	.010	.040	7.0	-.100	.010
	79	2	.03	.010	.010	.010	.23	.40	.010	.030	.010	.010	5.0	.010	.010
WS03	78	4	.04	.020	.010	.010	.40	.03	.090	.020	.010	.030	3.0	.040	.010
		6	.04	.010	.010	.090	.20	.40	.010	.090	.200	.090	5.0	-.100	.010
		7	.04	.010	.010	.090	.30	.40	.010	.090	.010	.090	5.0	-.100	.010
		10	.05	.010	.010	.010	.20	.40	.010	.010	.010	.060	6.0	-.100	.010
	79	2	.03	.010	.010	.010	.24	.40	.010	.010	.010	.010	5.0	.010	.010
WS04	78	6	.20	.010	.010	.090	.20	.40	.010	.090	.010	.090	5.0	-.100	.010
		10	.59	.010	.010	.010	.21	.40	.030	.010	.010	.020	7.0	-.100	.010
	79	2	.20	.010	.010	.010	.19	.40	.010	.010	.010	.040	5.0	.010	.010
WS06	78	6	.09	.010	.010	.090	.49	.40	.010	.090	.010	.090	6.0	-.100	.010
		10	.23	.010	.010	.010	.23	.40	.010	.010	.010	.030	7.0	-.100	.010
	79	2	.03	.010	.010	.010	.52	.40	.010	.010	.010	.040	5.0	.010	.020
WS07	78	4	.03	.100	.010	.010	.53	.02	.100	.070	.010	.020	6.0	.040	.010
		7	.04	.010	.010	.090	.41	.40	.010	.090	.020	.090	6.0	-1.000	.010
		10	.16	.010	.010	.010	.50	.40	.010	.010	.010	.060	8.0	-.100	.010
	79	2	.20	.010	.010	.010	.46	.40	.010	.010	.010	.030	7.0	.010	.010
WS08	73	7	.04	.010	.010	.090	.45	.40	.010	.090	.100	.100	6.0	-.100	.010
WS09	78	6	.03	.010	.010	.090	.40	.40	.010	.090	.010	.090	6.0	-.100	.010
		10	.32	.010	.010	.010	.31	.40	.030	.010	.010	.030	8.0	-.100	.010
	79	2	.03	.010	.010	.010	.45	.40	.010	.010	.010	.030	6.0	.010	.010
WS10	78	6	.10	.010	.010	.090	.40	.40	.090	.090	.010	.090	5.0	-.100	.010
		10	.48	.010	.010	.010	.36	.40	.020	.010	.010	.030	7.0	-.100	.100
	79	2	.08	.010	.010	.010	.43	.40	.010	.010	.010	.030	5.0	.010	.010

NOTE: -.1 INDICATES NOT SAMPLED

Table II A-4

CB-TRACT
WATER QUALITY PARAMETERS
SPRINGS & SEEPS
FOR SAMPLE DATE SHOWN

SFGS	YR	MO	PHEN (MG/L)	NH3 (MG/L)	AG (MG/L)	SE (MG/)	HG (MG/L)	BR (MG/L)	FFCAL COLIF. COLONY /100ML	TOTAL COLIF. COLONY /100ML	TOTAL ALPHA PCI/L	TOTAL BETA PCI/L	RADIUM 226 PCI/L	S2O3 (MG/L)	DOC (MG/L)
WS01	78	10	.0020	.310	-.100	.010	.01000	.850	.9	-.1	9.1	.0	-.1	4.0	34.0
	79	2	.0050	.030	.010	.010	.01000	.200	.9	.9	3.4	6.0	-.1	12.0	-.1
WS02	78	6	.0430	.500	-.100	-.100	.00300	.090	4.0	-.1	2.8	3.0	-.1	-.1	1.0
		10	.0030	.750	-.100	.010	.01000	.560	.9	-.1	1.6	1.0	-.1	4.0	24.0
	79	2	.0060	.030	.010	.010	.01000	.300	.9	.9	1.2	2.0	-.1	8.0	-.1
WS03	78	4	.0070	.120	.040	-.100	-.10000	.300	-.1	-.1	-.1	-.1	-.1	-.1	-.1
		6	.0010	.300	-.100	-.100	.00100	.600	.9	-.1	2.1	.0	-.1	-.1	9.0
		7	.0100	.350	-.100	-.100	.00100	.400	.9	-.1	1.2	.0	-.1	-.1	1.0
		10	.0010	.230	-.100	.010	.01000	.410	.9	-.1	6.1	.0	-.1	4.0	10.0
	79	2	.0050	.020	.010	.010	.01000	.500	-.1	.9	3.2	.0	-.1	13.0	-.1
WS04	78	6	.0100	.360	-.100	-.100	.00100	.500	5.0	-.1	.0	.0	-.1	-.1	1.0
		10	.0020	.350	-.100	.010	.01000	.840	2.0	-.1	.0	2.0	-.1	4.0	14.0
	79	2	.0140	.030	.010	.010	.01000	.300	.9	.9	.0	7.0	-.1	14.0	-.1
WS06	78	6	.0030	.030	-.100	-.100	.00100	.800	13.0	-.1	3.4	.0	-.1	-.1	1.0
		10	.0020	.030	-.100	.010	.01000	.800	.9	-.1	.0	.0	-.1	5.0	13.0
	79	2	.0070	.030	.010	.010	.01000	.090	.9	.9	1.6	.0	-.1	8.0	-.1
WS07	78	4	.0040	.280	.040	-.100	-.10000	.400	-.1	-.1	-.1	-.1	-.1	-.1	-.1
		7	.0100	1.200	-1.000	-.100	.00100	.400	.9	-.1	.0	.0	-.1	-.1	1.0
		10	.0010	4.500	-.100	.010	.01000	.650	.9	-.1	12.7	13.0	-.1	3.0	10.0
	79	2	.0070	.030	.010	.010	.01000	.300	.9	.9	.3	.0	-.1	10.0	-.1
WS08	78	7	.0020	.640	-.100	-.100	.00100	.700	.9	-.1	4.3	.0	-.1	-.1	1.0
WS09	78	6	.0050	.030	-.100	-.100	.00100	.100	6.0	-.1	.0	.0	-.1	-.1	3.0
		10	.0120	.300	-.100	.010	.01000	.560	.9	-.1	1.6	4.0	-.1	4.0	17.0
	79	2	.0080	.240	.010	.010	.01000	.600	.9	.9	1.3	3.0	-.1	12.0	-.1
WS10	78	6	.0080	.030	-.100	-.100	.00100	.400	20.0	-.1	1.3	.0	-.1	-.1	1.0
		10	.0030	.050	-.100	.010	.01000	.910	.9	-.1	.0	8.0	-.1	4.0	18.0
	79	2	.0200	.150	.010	.010	.01000	.600	.9	.9	2.8	3.0	-.1	11.0	-.1

NOTF: -.1 INDICATES NOT SAMPLED

GROUND WATER

II A-3 GROUND WATER

Ground water levels and quality data collected during this report period appear in this section. Data were collected at all aluvial wells that had water in them and at the deep monitoring wells.

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WATER LEVELS

WATER LEVELS DATA FOR GROUND WATER

A - Alluvial Wells
B - Upper Aquifer Wells
C - Lower Aquifer Wells

Water levels data collected during the period of this report are reported as follows:

Table/Figure No.	Description	Page No.
Figure II A-5	Alluvial Aquifer Monitoring Network with proposed new alluvial wells.	II A-215
Table II A-5	Table of Water Levels in Alluvial Wells	II A-216
Table II A-6	Index to Hand Plots of Water Levels in Alluvial Wells	II A-217
Table II A-7	Stevens Recorder Data for Alluvial Wells	
	a. Well WA01	II A-229
	b. Well WA03	II A-232
	c. Well WA05	II A-233
	d. Well WA06	II A-236
	e. Well WA09	II A-238
	f. Well WA10	II A-239
	g. Well WA11	II A-240
	h. Well WA12	II A-243
Figure II A-6	Deep Well Monitoring Network	II A-245
Table II A-8	Table of Water Levels in Upper Aquifer Wells	II A-246
Table II A-9	Index to Hand Plots of Water Levels in Upper Aquifer Wells	II A-247
Table II A-10	Table of Water Levels in Lower Aquifer Wells	II A-263
Table II A-11	Index to Hand Plots of Water Levels in Lower Aquifer Wells.	II A-264

An attempt has been made to refer to all wells in terms of their four-digit computer station codes. For additional information on these codes, refer to Section IV.

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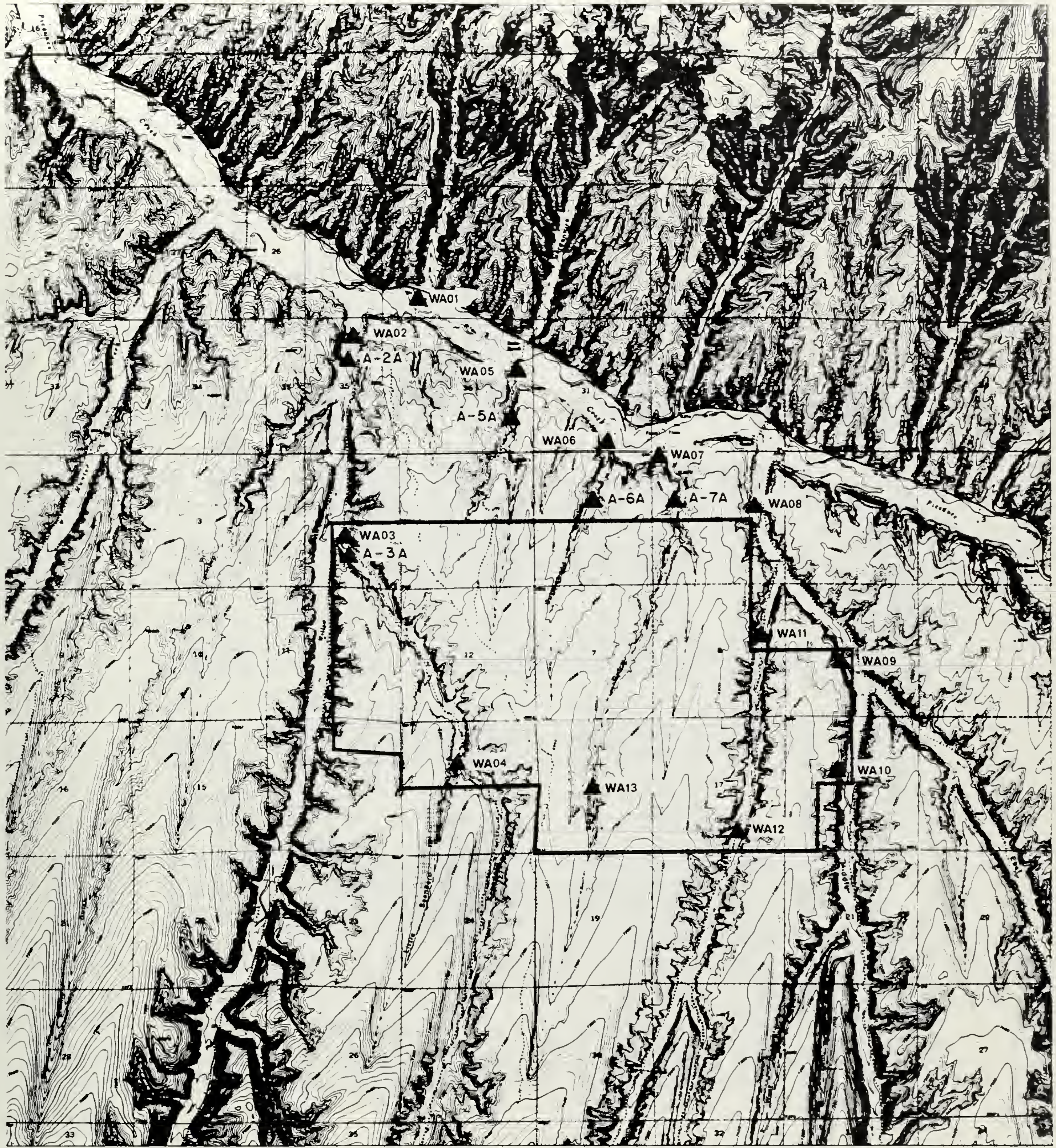


ALLUVIAL AQUIFER MONITORING NETWORK WITH PROPOSED NEW ALLUVIAL WELLS
A-2A, A-3A, A-5A, A-6A, A-7A

Figure II **A-5**

Table II A-5

CB - TRACT
WATER LEVELS IN ALLUVIAL WELLS
FOR SAMPLE DATE SHOWN

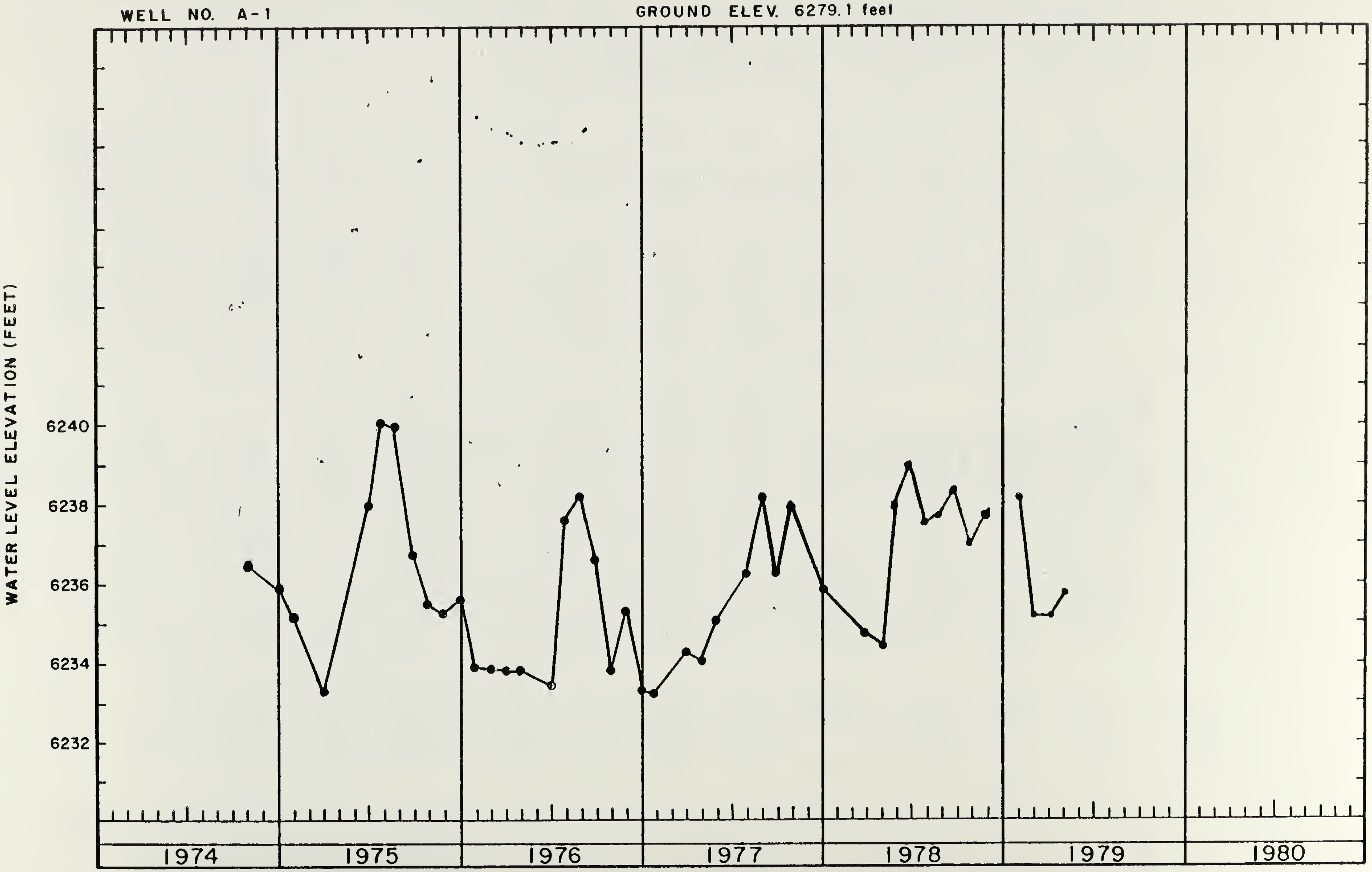
WELL ID		WA01	WA02	WA03	WA04	WA05	WA06	WA07	WA08	WA09	WA10	WA11	WA12	WA13
GROUND LEVEL ELEV. (FT)		6279.0	6281.0	6447.0		6343.0	6358.0	6382.0	6406.0	6538.0	6608.0	6502.0	6690.0	
M.P. ELEV.(FT)		6282.2	6284.5	6448.6		6345.0	6360.0	6383.8	6409.0	6540.2	6610.6	6503.8	6691.8	
YR	MO	Depth (FT)	Depth (FT)	Depth (FT)	Depth (FT)	Depth (FT)	Depth (FT)	Depth (FT)	Depth (FT)	Depth (FT)	Depth (FT)	Depth (FT)	Depth (FT)	Depth (FT)
77	9	6236.1	-3.0	6370.5	-2.0	6325.3	6327.4	6327.4	6382.5	6490.4	6557.0	6449.3	6636.5	-2.0
	10	6238.0	-3.0	6367.8	-2.0	6325.4	6325.0	6346.9	6382.8	6490.8	6557.5	6449.4	6636.5	-2.0
	11		-3.0	6367.1	-2.0	6326.4	6325.8	6347.0						-2.0
	12	6235.8	-3.0	6365.5	-2.0	6326.6	6326.8	6346.5	6382.8	6490.9	6562.1	6449.1	6636.1	-2.0
78	1		-3.0	6365.0	-2.0	6326.4	6324.9	6345.7				6449.3		-2.0
	2		-3.0	6365.0	-2.0	6326.4	6324.9	6345.7				6449.3		-2.0
	3	6234.7	-3.0	6364.6	-2.0	6326.6	6323.9	6344.2	6379.0	6490.7	6562.6	6449.3	6636.5	-2.0
	4	6234.4	-3.0	6364.9	-2.0	6326.4	6323.9	6344.0	6382.4	6490.3	6564.3	6449.5	6637.0	-2.0
	5	6238.1	-3.0	6365.2	-2.0	6325.4	6323.0	6345.0	6381.9	6490.09	6563.4	6447.4	6637.0	
	6	6239.1		6366.4		6327.2	6331.8	6351.4		6492.5	6563.3	6448.7	6637.69	
	7	6237.8	-3.0	6369.5	-2.0	6328.0		6352.9	6382.0	6495.35	6558.84	6448.75	6636.3	
	8	6238.0		6369.6		6327.0	6327.25		6402.4	6490.2	6557.1	6448.6	6635.9	
	9	6238.22	-3.0	6369.6	-2.0	6327.4	6331.2	6351.1	6379.6	6490.25	6556.54	6448.55	6636.72	
	10	6237.11	-3.0	6371.94	-2.0	6326.34	6333.06	-3.0	6381.25	6489.6	6555.94	6448.09	6634.51	
	11	6238.1	-3.0	6367.35	-2.0	6326.75	6325.57	-3.0	6381.2	6489.6	6556.69	6448.	6634.32	
	12													
79	1	6238.0	-3.0	6365.0	-2.0		6326.8	-2.0	6380.3	6491.2	-2.0	6448.4	6634.5	
	2	6235.3	-3.0	6364.4	-2.0	6326.3	6325.8	-2.0	6382.2	6499.9	-2.0	6446.2	6633.2	
	3	6235.2	-3.0	6365.8	-2.0		6328.3	-2.0		6491.5		6450.2	6636.3	
	4	6235.8	-3.0	6365.2	-2.0	6325.9	6327.1	-2.0	6383.7	6483.0	-2.0	6449.1	6633.9	

NOTE: -1.0 INDICATES WELL IS FLOWING
-2.0 INDICATES WELL IS DRY
-3.0 INDICATES WELL IS PLUGGED

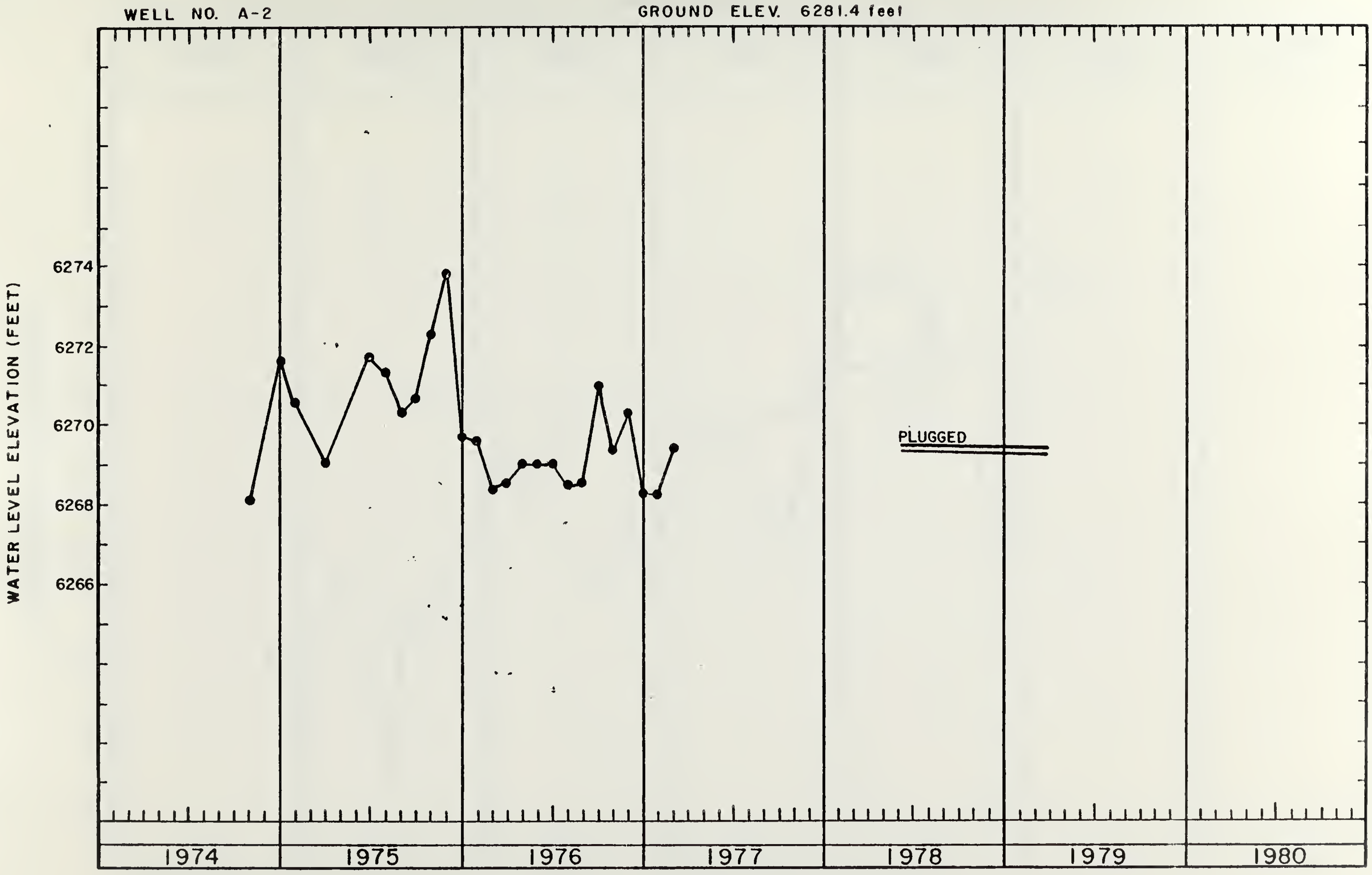
Table II A-6

Hand Plots of Water Levels in Alluvial Wells

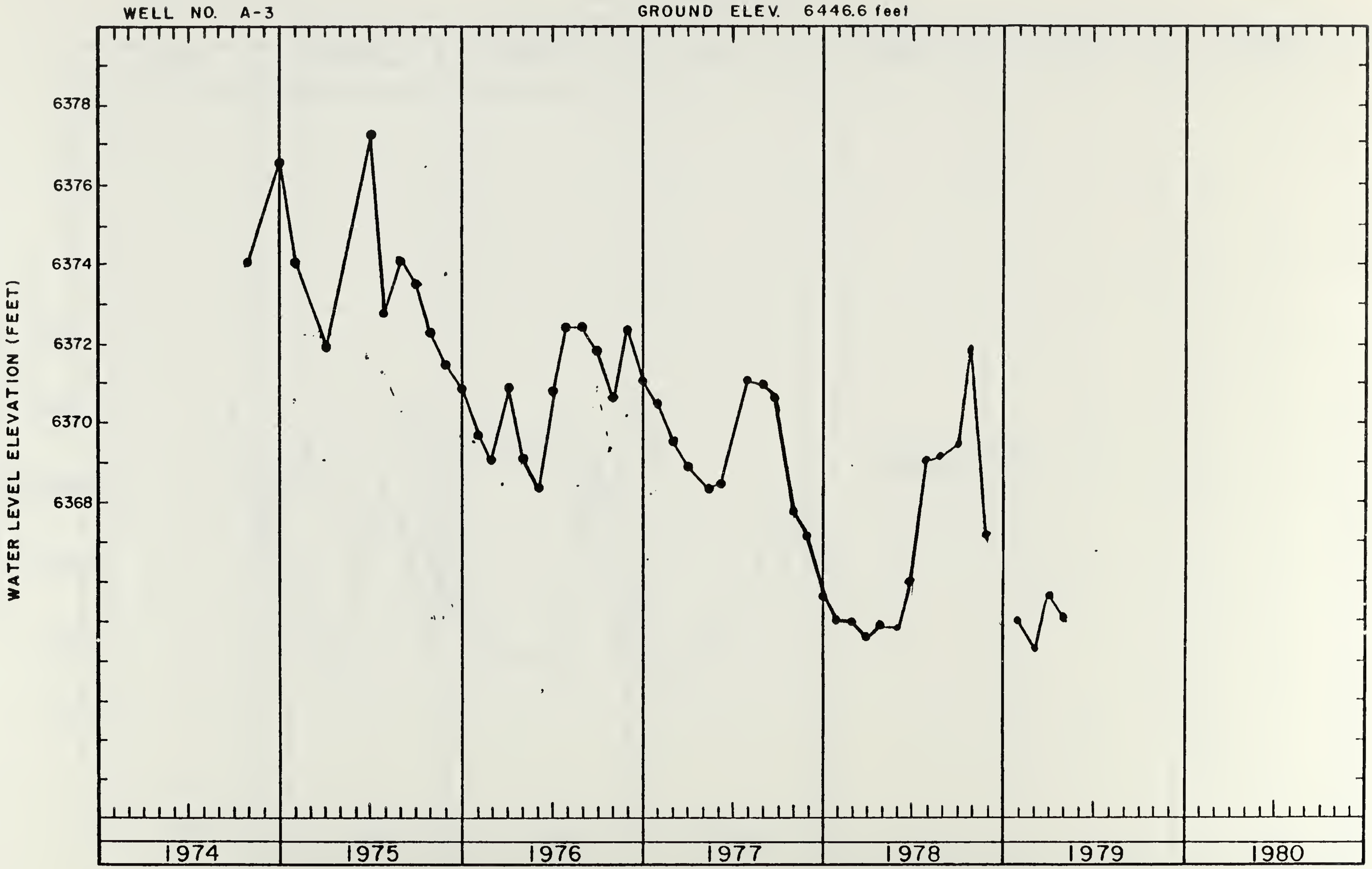
Well No.	Computer Code	Page No.
A-1	WA01	II A-218
A-2	WA02	II A-219
A-3	WA03	II A-220
A-5	WA05	II A-221
A-6	WA06	II A-222
A-7	WA07	II A-223
A-8	WA08	II A-224
A-9	WA09	II A-225
A-10	WA10	II A-226
A-11	WA11	II A-227
A-12	WA12	II A-228



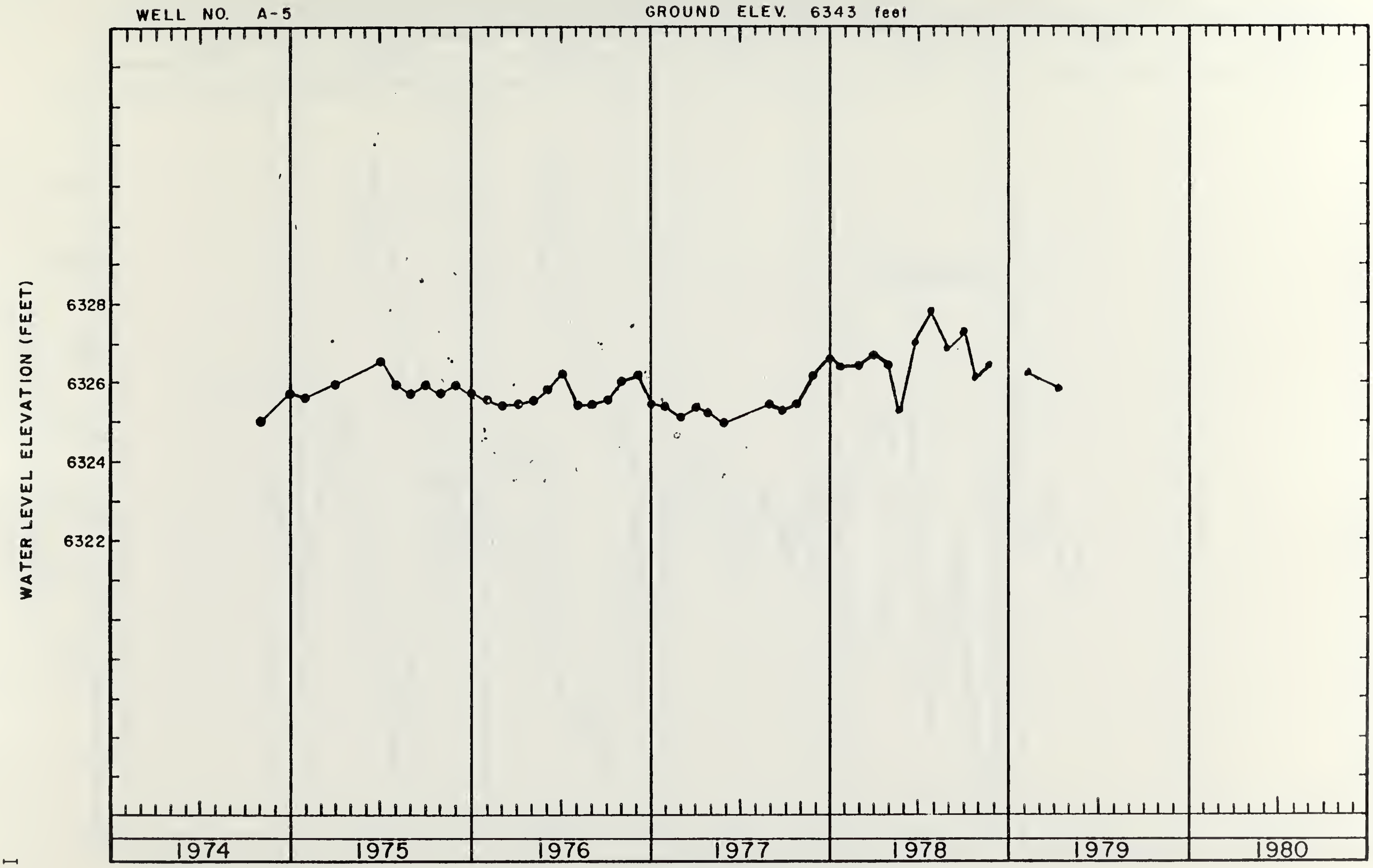
WATER LEVEL DATA



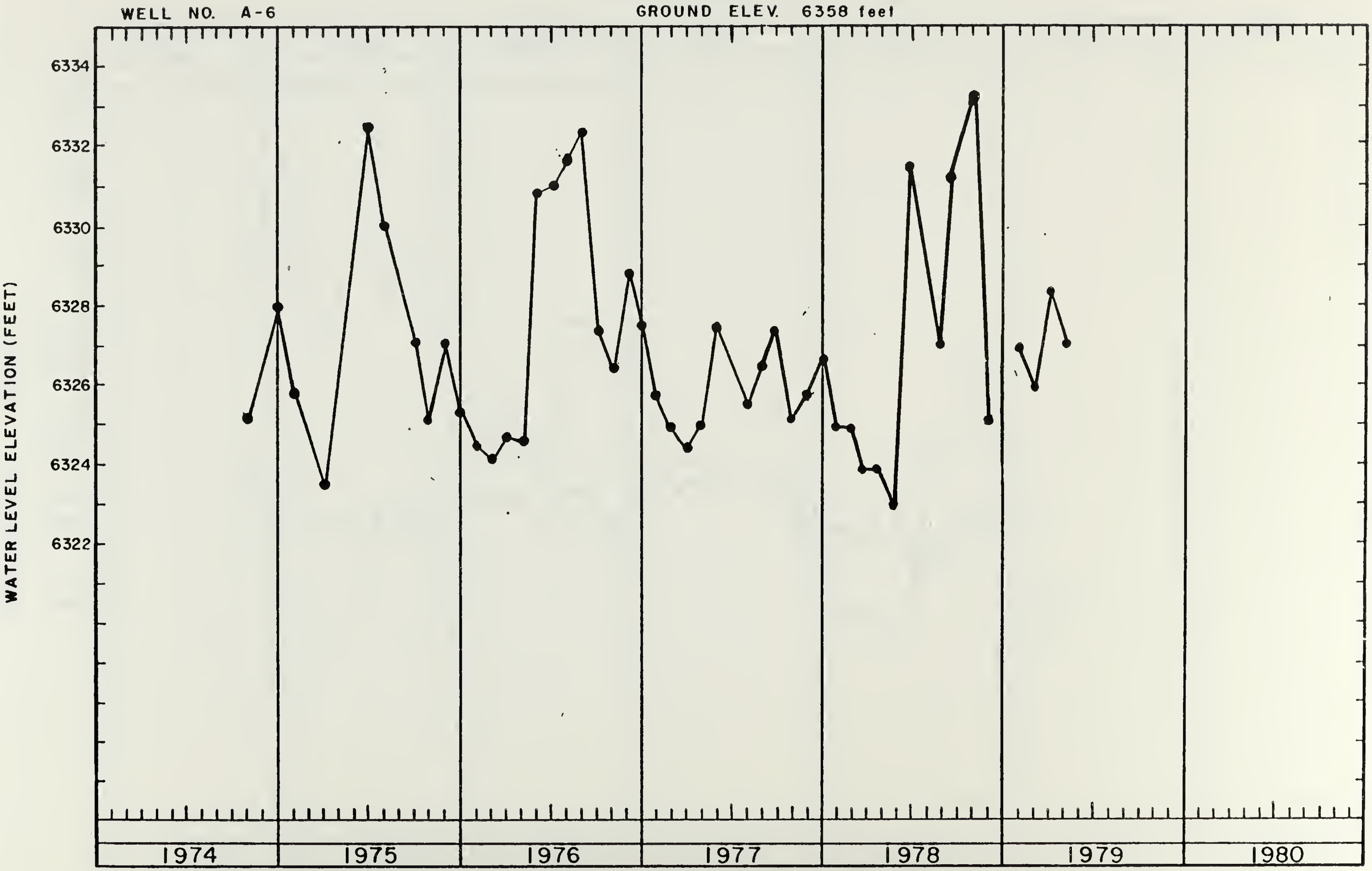
WATER LEVEL DATA



WATER LEVEL DATA



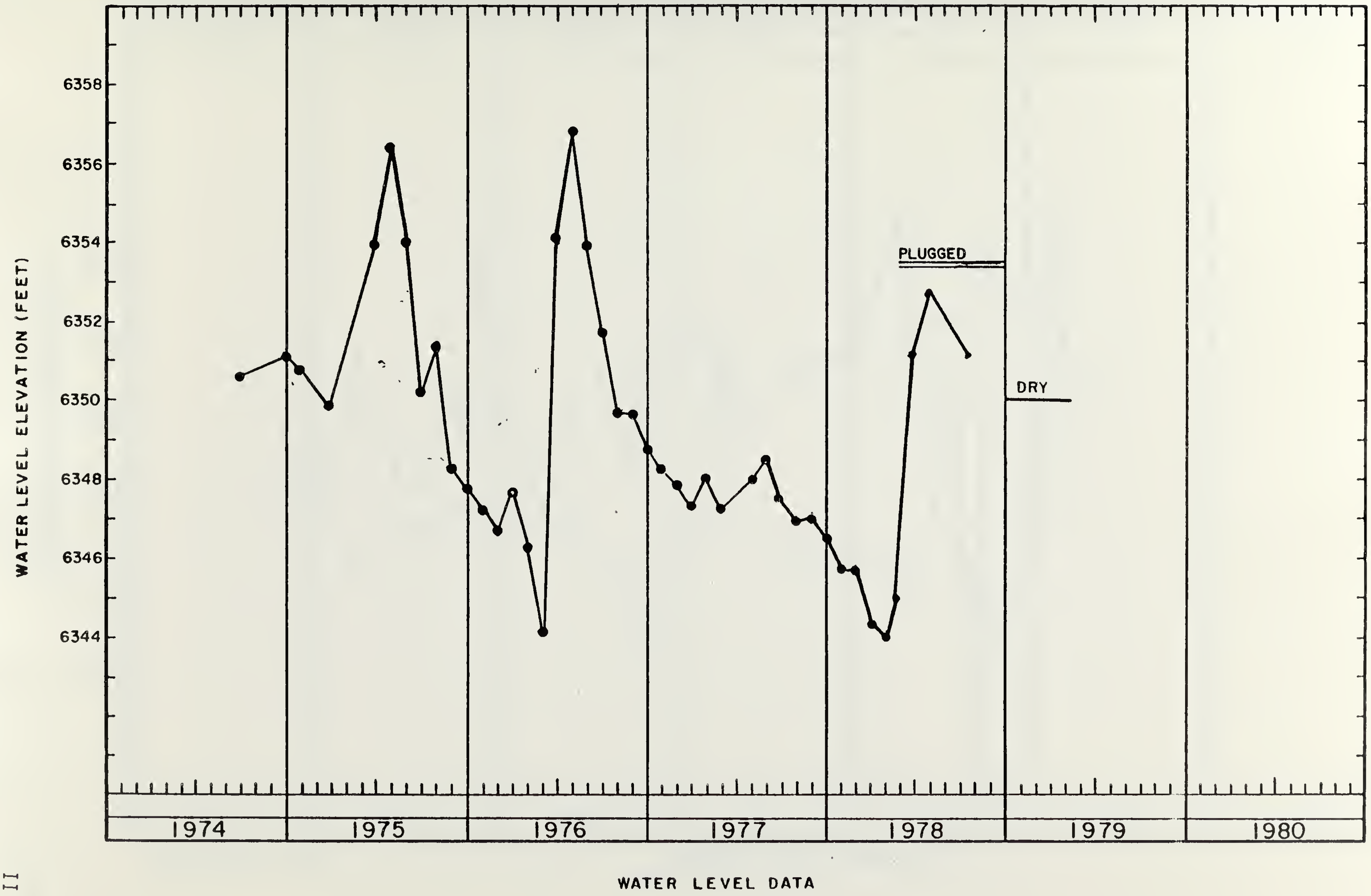
WATER LEVEL DATA

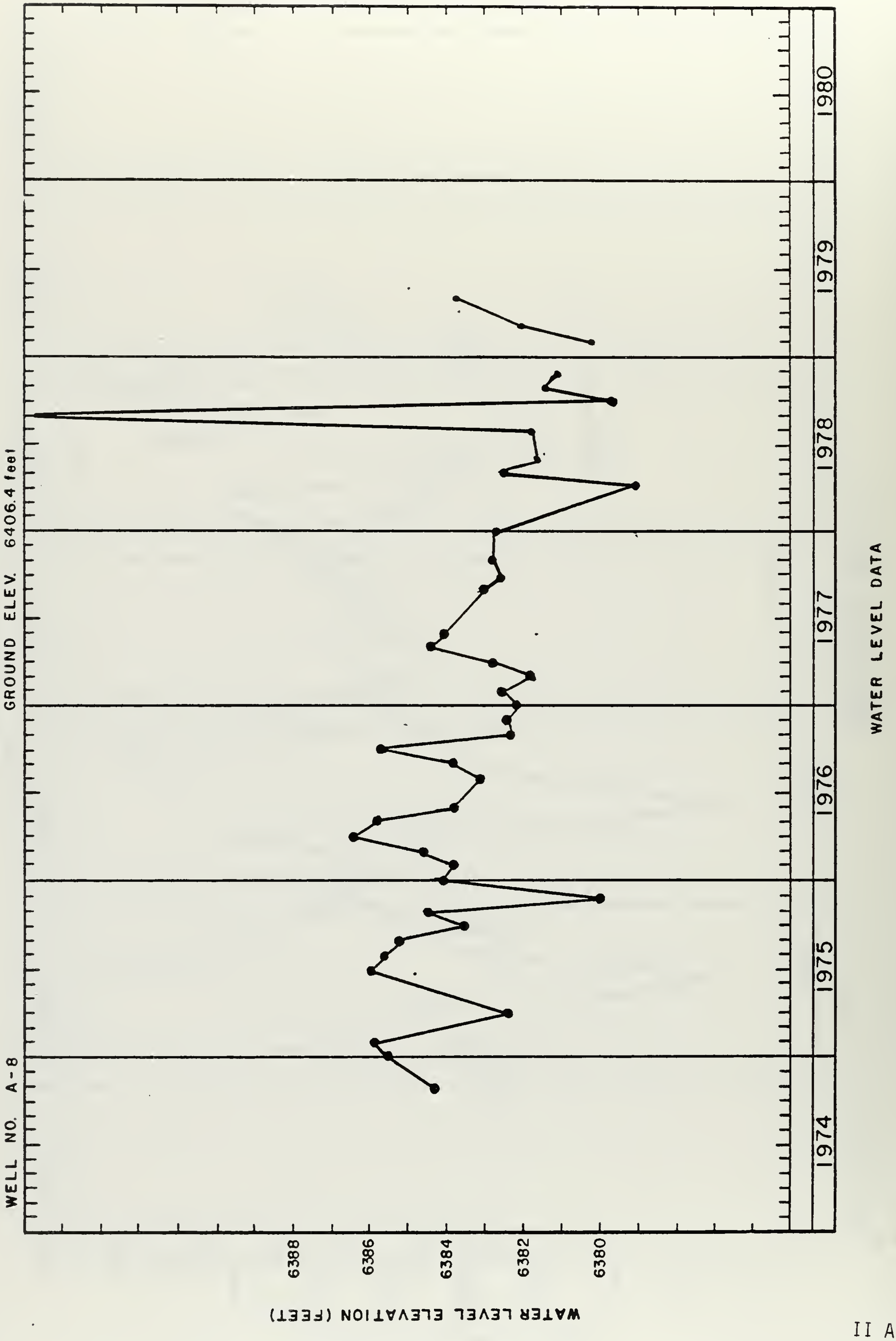


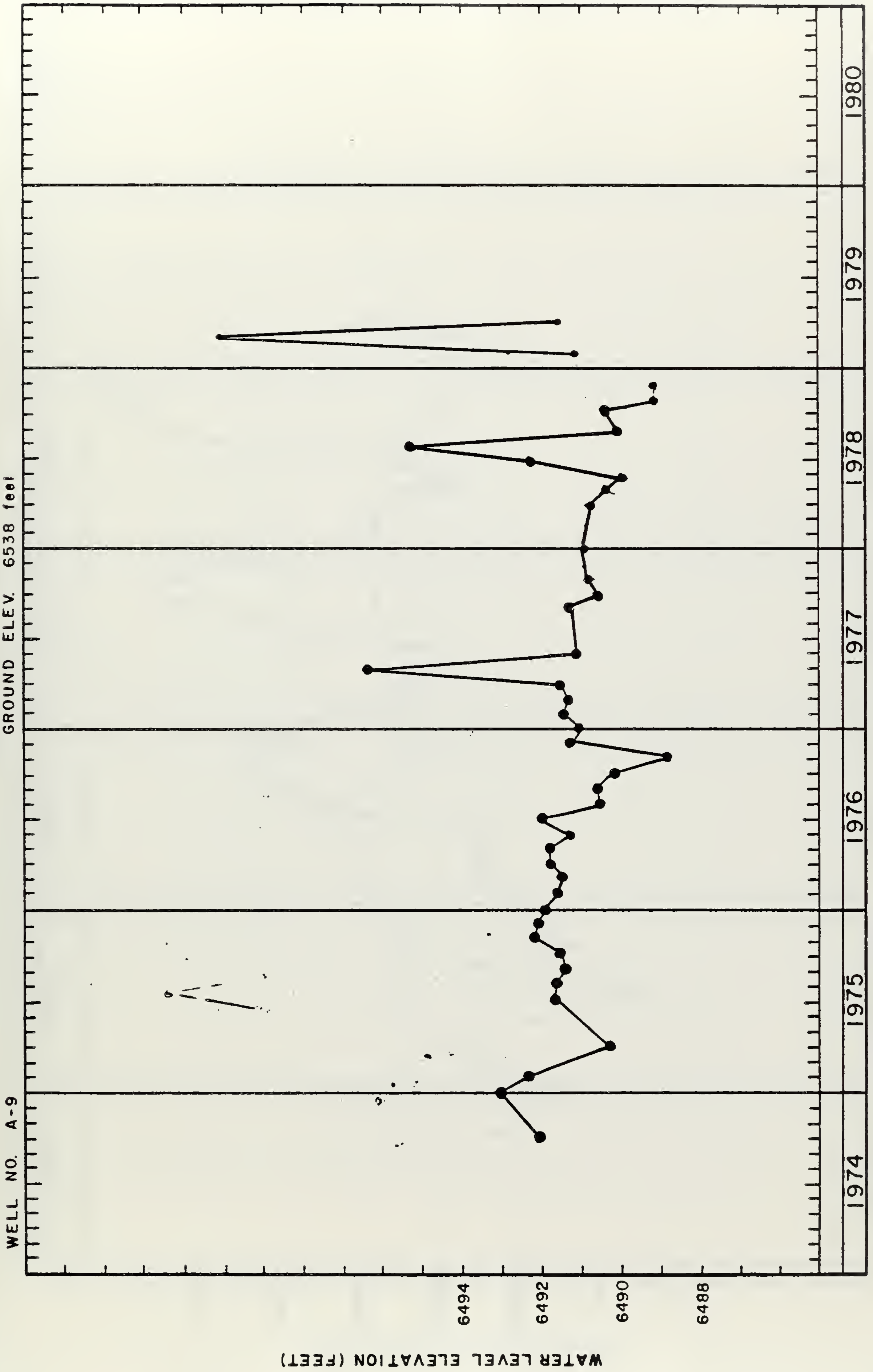
WATER LEVEL DATA

WELL NO. A-7

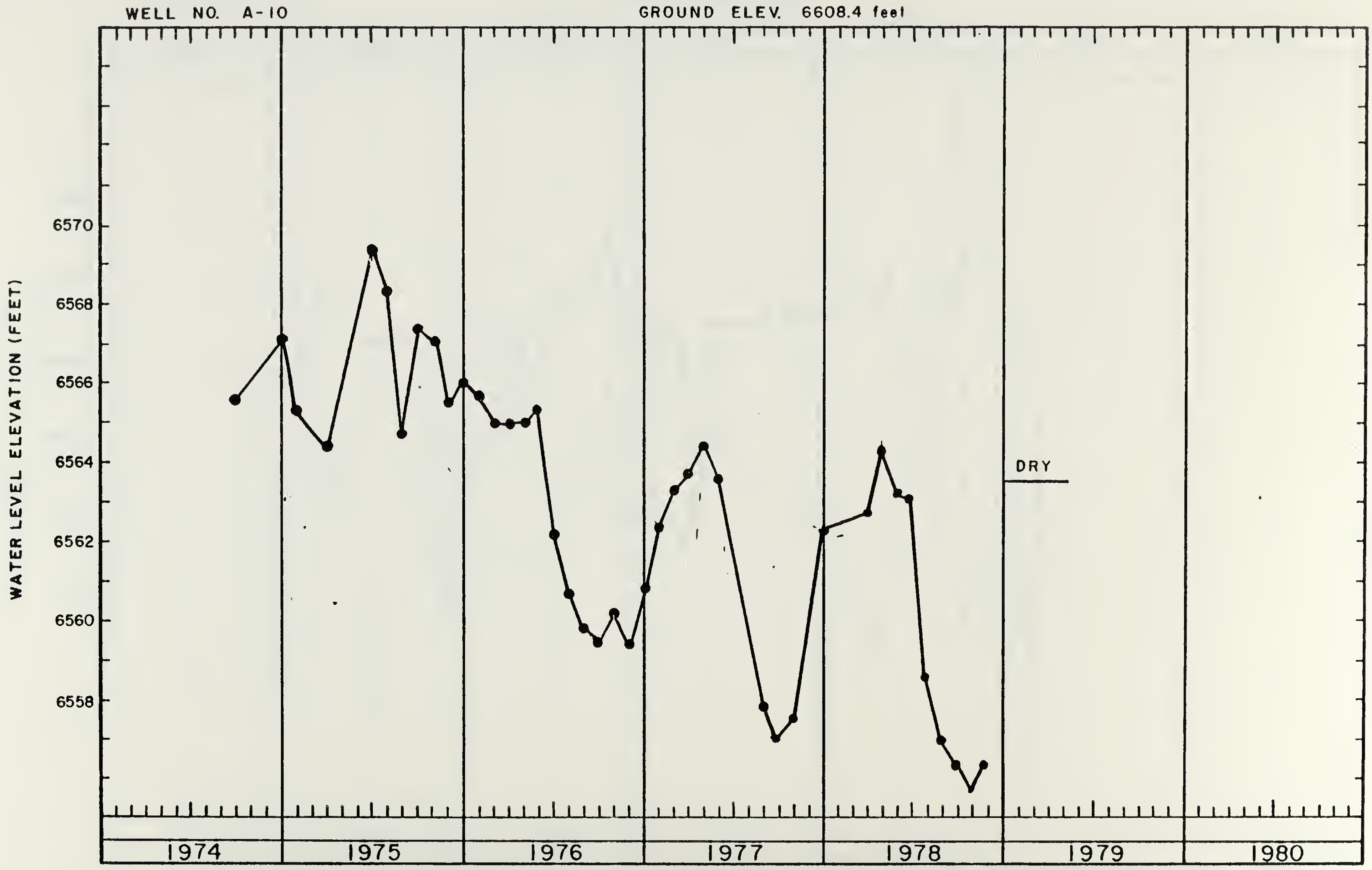
GROUND ELEV. 6381.8 feet




WELL NO. A-8
GROUND ELEV. 6406.4 feet
WATER LEVEL DATA
1974
1975
1976
1977
1978
1979
1980
6388
6386
6384
6382
6380
WATER LEVEL ELEVATION (FEET)



WATER LEVEL DATA



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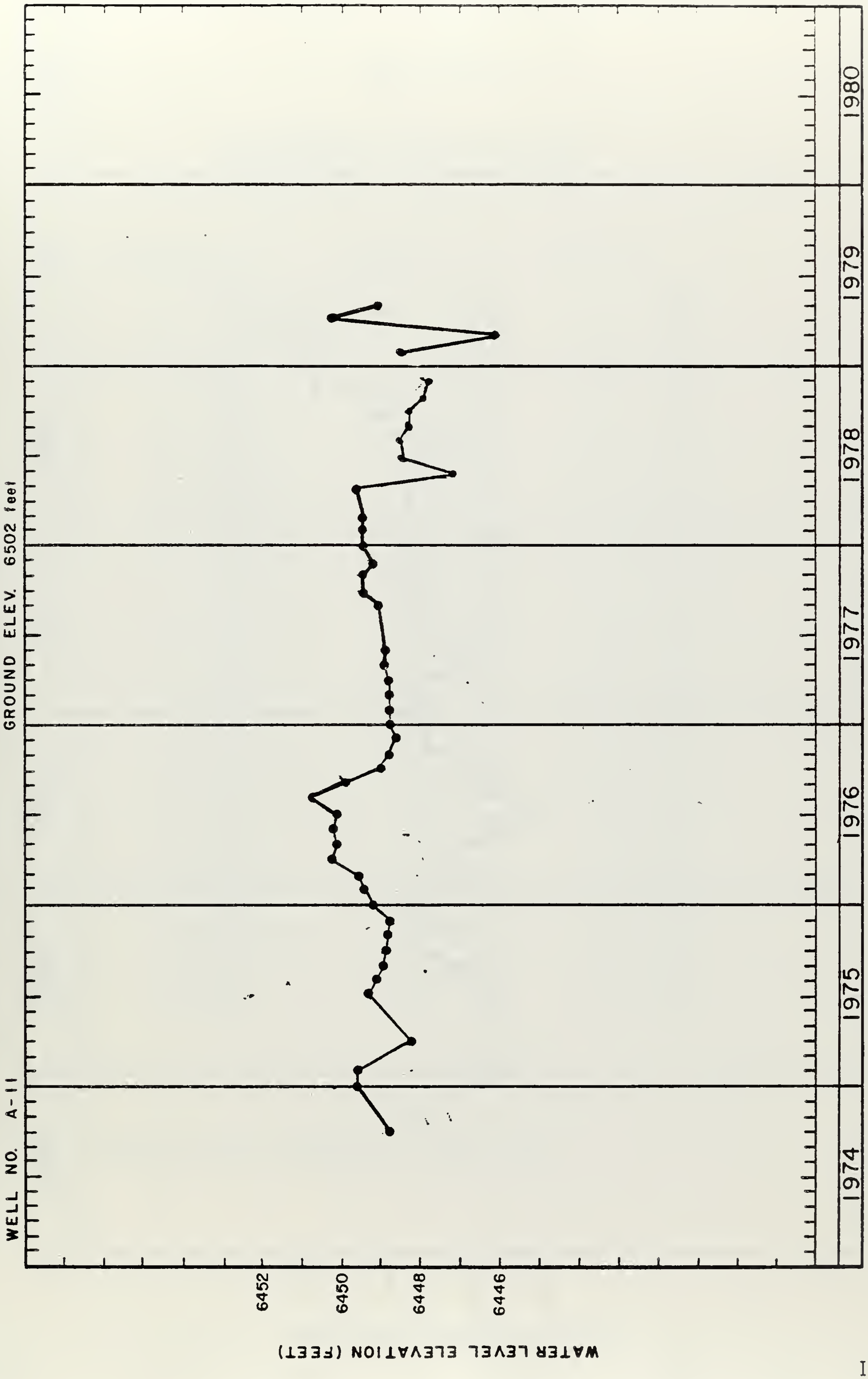


WATER LEVEL DATA

WATER LEVEL DATA

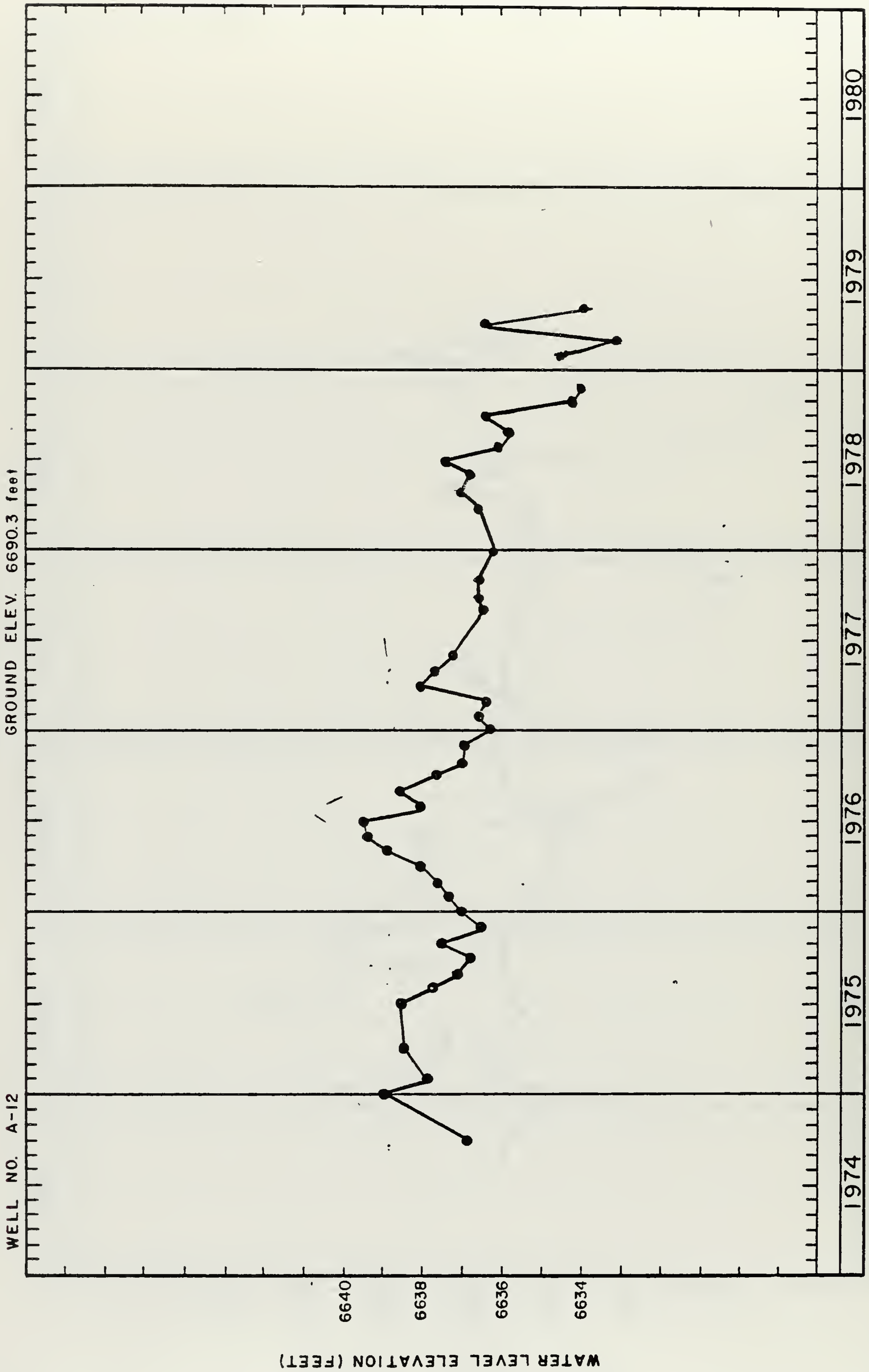


Table II A-7a

STEVENS RECORDER DATA FROM ALLUVIAL WELL WA01

DAILY MAXIMUM DISTANCE IN FEET FROM TOP OF WELL TO WATER SURFACE *

AUGUST 1978		SEPTEMBER 1978		OCTOBER 1978	
1	44.35	1	44.15	1	44.41
2	44.35	2	43.94	2	45.09
3	44.18	3	43.95	3	45.09
4	44.18	4	43.97	4	45.09
5	44.18	5	43.97	5	45.09
6	44.18	6	43.98	6	45.08
7	44.18	7	43.99	7	45.08
8	44.18	8	43.91	8	45.08
9	44.18	9	43.74	9	45.08
10	44.18	10	43.74	10	45.08
11	44.17	11	43.75	11	45.30
12	44.17	12	43.75	12	45.30
13	44.16	13	43.75	13	45.30
14	44.16	14	43.76	14	45.30
15	44.15	15	43.76	15	45.30
16	44.15	16	43.76	16	45.30
17	44.15	17	43.76	17	45.30
18	44.15	18	43.76	18	45.30
19	44.15	19	43.76	19	45.30
20	44.15	20	43.78	20	45.30
21	44.15	21	43.78	21	45.30
22	44.15	22	43.78	22	45.30
23	44.15	23	43.78	23	45.29
24	44.15	24	43.78	24	45.20
25	44.15	25	43.78	25	45.16
26	44.15	26	43.78	26	45.12
27	44.15	27	44.41	27	45.03
28	44.15	28	44.41	28	45.00
29	44.15	29	44.41	29	44.99
30	44.15	30	44.41	30	44.93
31	44.15			31	44.91

* Measuring point elevation = 6282.2 feet.

Table II A-7a (Continued)*

NOVEMBER 1978		DECEMBER 1978		JANUARY 1979	
1	44.75	1	44.09	1	44.20
2	44.74	2	44.09	2	44.24
3	44.62	3	44.09	3	44.24
4	44.51	4	44.09	4	44.24
5	44.38	5	44.10	5	44.24
6	44.27	6	44.10	6	44.24
7	44.13	7	44.10	7	44.24
8	44.00	8	44.10	8	44.24
9	43.92	9	44.10	9	44.24
10	43.81	10	44.10	10	44.24
11	43.72	11	44.10	11	44.24
12	43.57	12	44.10	12	44.24
13	43.54	13	44.10	13	44.24
14	43.39	14	44.10	14	44.24
15	43.31	15	44.10	15	44.24
16	43.30	16	44.10	16	44.24
17	43.30	17	44.10	17	34.10
18	43.30	18	44.10	18	33.99
19	43.32	19	44.10	19	33.99
20	43.34	20	44.10	20	33.99
21	43.34	21	44.10	21	33.99
22	43.34	22	44.11	22	33.99
23	43.34	23	44.11	23	33.99
24	43.35	24	44.11	24	33.99
25	43.35	25	44.12	25	33.99
26	43.35	26	44.18	26	33.99
27	43.35	27	44.18	27	33.99
28	43.35	28	44.19	28	33.99
29	43.35	29	44.20	29	33.99
30	43.35	30	44.20	30	33.99
		31	44.20	31	33.99

*Measuring point elevation = 6282. feet.

Table II A-7a (Continued)*

FEBRUARY 1979		MARCH 1979		APRIL 1979	
1	33.99	1	46.96	1	
2	33.99	2	46.96	2	
3	33.99	3	46.96	3	
4	33.99	4	46.96	4	
5	33.99	5	46.96	5	
6	33.99	6	46.96	6	
7	33.99	7	46.96	7	
8	33.99	8	46.96	8	
9	33.99	9	46.96	9	
10	33.99	10	46.96	10	
11	33.99	11	46.96	11	
12	33.99	12	46.96	12	
13	46.93	13	46.97	13	
14	46.90	14	46.97	14	
15	46.90	15	46.97	15	
16	46.92	16	46.97	16	
17	46.88	17		17	
18	46.94	18		18	
19	46.95	19		19	
20	46.94	20		20	
21	46.95	21		21	
22	46.95	22		22	
23	46.92	23		23	
24	46.91	24		24	
25	46.96	25		25	
26	46.93	26		26	
27	46.96	27		27	
28	46.96	28		28	
		29		29	
		30		30	
		31			

* Measuring point elevation = 6282.2 feet.

Table II A-7b

STEVENS RECORDER DATA FROM ALLUVIAL WELL WA03

DAILY MAXIMUM DISTANCE IN FEET FROM TOP OF WELL TO WATER SURFACE *

AUGUST 1978		OCTOBER 1978		NOVEMBER 1978	
1	RF	13	96.51	1	77.49
2	RF	14	96.51	2	77.41
3	RF	15	96.51	3	77.35
4	RF	16	96.51	4	77.31
5	RF	17	96.51	5	77.31
6	RF	18	96.51	6	77.30
7	RF	19	95.65	7	77.30
8	RF	20	95.63	8	77.30
9	RF	21	95.59	9	77.30
10	RF	22	95.52	10	77.30
11	RF	23	95.42	11	77.30
12	RF	24	95.33	12	77.30
13	RF	25	78.00	13	77.30
14	RF	26	78.00	14	77.30
		27	78.00	15	77.30
		28	78.00	16	77.30
		29	77.70	17	77.30
		30	77.66	18	77.30
		31	77.61	19	77.30
				20	77.30

* Measuring point elevation = 6448.6 feet.

Table II A-7c

STEVENS RECORDER DATA FROM ALLUVIAL WELL WA05

DAILY MAXIMUM DISTANCE IN FEET FROM TOP OF WELL TO WATER SURFACE*

AUGUST 1978		SEPTEMBER 1978		OCTOBER 1978	
1	17.31	1	17.07	1	18.67
2	17.31	2	17.08	2	18.67
3	17.31	3	17.08	3	18.71
4	17.31	4	17.08	4	18.71
5	17.31	5	17.11	5	18.71
6	17.31	6	17.11	6	18.72
7	17.31	7	17.11	7	18.72
8	17.31	8	17.11	8	18.72
9	17.31	9	17.11	9	18.72
10	17.31	10	17.11	10	18.72
11	17.30	11	17.11	11	18.73
12	17.30	12	17.11	12	18.73
13	17.30	13	17.11	13	18.74
14	17.29	14	17.11	14	18.75
15	17.26	15	17.12	15	18.75
16	17.25	16	17.12	16	18.75
17	17.25	17	17.12	17	18.75
18	17.25	18	17.12	18	18.75
19	17.27	19	17.12	19	18.75
20	17.29	20	17.12	20	18.75
21	17.29	21	17.12	21	18.75
22	17.25	22	17.12	22	18.75
23	17.25	23	17.12	23	18.75
24	17.25	24	17.12	24	18.29
25	17.25	25	17.12	25	18.29
26	17.25	26	17.12	26	18.29
27	17.25	27	17.12	27	18.29
28	17.25	28	18.02	28	18.29
29	17.25	29	18.05	29	18.29
30	17.25	30	18.09	30	18.29
31	17.24			31	18.29

* Measuring point elevation = 6345.0 feet.

Table II A-7c (Continued)*

NOVEMBER 1978		DECEMBER 1978		JANUARY 1979	
1	18.29	1	18.31	1	18.36
2	18.29	2	18.31	2	18.36
3	18.29	3	18.31	3	18.36
4	18.29	4	18.31	4	18.36
5	18.29	5	18.31	5	18.36
6	18.29	6	18.31	6	18.37
7	18.29	7	18.31	7	18.37
8	18.28	8	18.31	8	18.37
9	18.27	9	18.31	9	18.37
10	18.27	10	18.31	10	18.37
11	18.27	11	18.31	11	18.39
12	18.25	12	18.30	12	18.41
13	18.25	13	18.30	13	18.41
14	18.25	14	18.30	14	18.41
15	18.25	15	18.30	15	18.41
16	18.25	16	18.30	16	18.42
17	18.25	17	18.30	17	18.42
18	18.25	18	18.31	18	18.43
19	18.25	19	18.33	19	18.46
20	18.25	20	18.34	20	18.46
21	18.25	21	18.34	21	18.46
22	18.25	22	18.36	22	18.46
23	18.25	23	18.36	23	18.45
24	18.25	24	18.36	24	18.40
25	18.25	25	18.36	25	18.41
26	18.25	26	18.36	26	18.41
27	18.25	27	18.36	27	18.41
28	18.25	28	18.36	28	18.40
29	18.25	29	18.36	29	18.40
30	18.31	30	18.36	30	18.40
		31	18.36	31	18.40

* Measuring point elevation = 6345.0 feet.

Table II A- 7c (Continued) *

FEBRUARY 1979		MARCH 1979		APRIL 1979	
1	18.40	1	18.44	1	18.40
2	18.40	2	18.44	2	18.40
3	18.40	3	18.44	3	18.40
4	18.40	4	18.44	4	18.40
5	18.40	5	18.44	5	18.40
6	18.41	6	18.44	6	18.40
7	18.41	7	18.44	7	18.40
8	18.42	8	18.42	8	18.40
9	18.45	9	18.42	9	18.40
10	18.46	10	18.42	10	18.40
11	18.46	11	18.42	11	18.40
12	18.46	12	18.41	12	18.40
13	18.46	13	18.40	13	18.40
14	18.46	14	18.40	14	18.40
15	18.46	15	18.40	15	18.40
16	18.46	16	18.40	16	18.40
17	18.46	17	18.40	17	18.40
18	18.46	18	18.40	18	18.40
19	18.46	19	18.40	19	18.40
20	18.45	20	18.40	20	18.40
21	18.45	21	18.40	21	18.40
22	18.45	22	18.40	22	18.40
23	18.44	23	18.40	23	18.40
24	18.44	24	18.40	24	18.40
25	18.44	25	18.40	25	18.40
26	18.44	26	18.40	26	18.40
27	18.44	27	18.40	27	18.40
28	18.44	28	18.40	28	18.40
		29	18.40	29	18.40
		30	18.40	30	18.40
		31	18.40		

* Measuring point elevation = 6345.0 feet.

Table II A-7d

STEVENS RECORDER DATA FROM ALLUVIAL WELL WA06

DAILY MAXIMUM DISTANCE IN FEET FROM TOP OF WELL TO WATER SURFACE*

AUGUST 1978		SEPTEMBER 1978		OCTOBER 1978	
1	30.37	1	26.62	1	25.90
2	30.32	2	26.61	2	25.90
3	30.26	3	26.61	3	25.90
4	30.25	4	26.60	4	25.90
5	30.25	5	26.61	5	25.90
6	30.25	6	26.66	6	25.90
7	30.25	7	26.77	7	25.90
8	30.25	8	26.86	8	25.90
9	30.25	9	27.06	9	25.90
10	30.25	10	27.25	10	28.38
11	30.25	11	27.36	11	28.38
12	30.25	12	27.43	12	28.38
13	30.25	13	27.50	13	28.38
14	30.25	14	27.56	14	28.38
15	30.25	15	27.57	15	28.38
16	30.25	16	27.18	16	28.38
17	30.25	17	27.18	17	28.38
18	30.25	18	27.18	18	28.38
19	30.25	19	27.18	19	28.38
20	30.25	20	27.18	20	28.38
21	30.74	21	27.18	21	28.38
22	31.48	22	27.18	22	28.38
23	32.01	23	27.18	23	28.38
24	32.64	24	27.18	24	30.00
25	33.24	25	27.18	25	30.00
26	33.55	26	27.18	26	30.00
27	33.78	27	18.29	27	30.00
28	34.10	28	18.29	28	30.00
29	34.48	29	18.29	29	30.00
30	34.59	30	18.29	30	30.00
31	34.80			31	30.00

* Measuring point elevation = 6360.0 feet.

Table II A-7d (Continued)*

NOVEMBER 1978		DECEMBER 1978		JANUARY 1979	
1	30.00	1	32.80	1	32.80
2	30.00	2	32.80	2	32.80
3	30.00	3	32.80	3	
4	30.00	4	32.80	4	
5	30.00	5	32.80	5	
6	30.00	6	32.80	6	
7	30.00	7	32.80	7	
8	30.00	8	32.80	8	
9	30.00	9	32.80	9	
10	30.00	10	32.80	10	
11	30.00	11	32.80	11	
12	30.00	12	32.80	12	
13	30.00	13	32.80	13	
14	30.00	14	32.80	14	
15	30.00	15	32.80	15	
16	30.00	16	32.80	16	
17	30.00	17	32.80	17	
18	30.00	18	32.80	18	
19	30.00	19	32.80	19	
20	30.00	20	32.80	20	
21	30.00	21	32.80	21	
22	30.00	22	32.80	22	
23	30.00	23	32.80	23	
24	30.00	24	32.80	24	
25	30.00	25	32.80	25	
26	30.00	26	32.80	26	
27	30.00	27	32.80	27	
28	30.00	28	32.80	28	
29	30.00	29	32.80	29	
30	30.00	30	32.80	30	
		31	32.80	31	

* Measuring point elevation = 6360.0 feet.

Table II A-7e

STEVENS RECOROER DATA FROM ALLUVIAL WELL WA09

DAILY MAXIMUM DISTANCE IN FEET FROM TOP OF WELL TO WATER SURFACE *

SEPTEMBER 1978		NOVEMBER 1978	
1		1	48.00
2		2	48.00
3		3	48.00
4		4	48.00
5		5	48.00
6		6	48.00
7		7	48.00
8		8	48.00
9		9	
10		10	
11	47.99	11	
12	47.99	12	
13	47.99	13	
14	47.99	14	
15	47.99	15	
16	47.99	16	
17	47.99	17	
18	47.99	18	
19	47.99	19	
20	47.99	20	
21	47.99	21	
22	47.99	22	
23	47.99	23	
24	47.99	24	
25	48.00	25	
26	48.00	26	
27	48.00	27	
28	48.00	28	
29	48.00	29	
30	48.00	30	

* Measuring point elevation = 6540.2 feet.

Table II A-7f

STEVENS RECORDER DATA FROM ALLUVIAL WELL WA10

DAILY MAXIMUM DISTANCE IN FEET FROM TOP OF WELL TO WATER SURFACE *

AUGUST 1978	
1	51.72
2	51.71
3	51.75
4	51.82
5	51.85
6	51.88
7	51.89
8	42.26
9	42.26
10	42.26
11	42.26
12	42.26
13	42.26
14	42.26
15	42.26
16	42.26
17	42.26
18	42.26
19	42.26
20	42.26
21	42.26
22	42.26
23	42.26
24	42.26
25	42.26
26	42.26
27	42.26
28	42.26
29	42.26
30	42.26
31	42.26

* Measuring point elevation = 6610.6 feet.

Table II A-7g

STEVENS RECORDER DATA FROM ALLUVIAL WELL WA11

DAILY MAXIMUM DISTANCE IN FEET FROM TOP OF WELL TO WATER SURFACE *

AUGUST 1978		SEPTEMBER 1978		OCTOBER 1978	
1	53.90	1	54.97	1	
2	53.90	2	54.97	2	
3	53.90	3	54.97	3	
4	53.90	4	54.97	4	
5	53.90	5	54.97	5	
6	53.90	6	54.97	6	
7	53.90	7	54.40	7	
8	53.90	8	54.40	8	
9	53.90	9	54.40	9	
10	53.90	10	54.46	10	
11	53.90	11	54.46	11	
12	53.90	12	54.46	12	
13	53.90	13	54.46	13	
14	53.90	14	54.46	14	
15	53.90	15	54.46	15	
16	53.90	16	54.46	16	
17	53.90	17	54.46	17	
18	53.90	18	54.46	18	
19	53.90	19	54.46	19	
20	53.90	20	54.46	20	
21	53.90	21	54.46	21	
22	53.90	22	54.46	22	
23	53.90	23	54.46	23	
24	53.90	24	54.46	24	54.45
25	53.90	25	54.46	25	54.45
26	53.90	26	54.46	26	54.45
27	53.90	27	54.46	27	54.45
28	53.90	28	54.46	28	54.45
29	53.90			29	54.45
30	53.90			30	54.45
31	53.90			31	54.45

* Measuring point elevation = 6503.8 feet.

Table II A-7g (Continued)*

NOVEMBER 1978		DECEMBER 1978		JANUARY 1979	
1	54.45	1	54.56	1	54.56
2	54.45	2	54.56	2	54.56
3	54.45	3	54.56	3	54.53
4	54.45	4	54.56	4	54.53
5	54.45	5	54.56	5	54.53
6	54.45	6	54.56	6	54.53
7	54.45	7	54.56	7	54.53
8	54.45	8	54.56	8	54.53
9	54.45	9	54.56	9	54.53
10	54.45	10	54.56	10	54.53
11	54.45	11	54.56	11	54.53
12	54.45	12	54.56	12	54.53
13	54.45	13	54.56	13	54.53
14	54.45	14	54.56	14	54.53
15	54.45	15	54.56	15	54.53
16	54.45	16	54.56	16	54.53
17	54.45	17	54.56	17	54.53
18	54.45	18	54.56	18	54.53
19	54.45	19	54.56	19	54.60
20	54.45	20	54.56	20	54.60
21	54.45	21	54.56	21	54.60
22	54.45	22	54.56	22	54.60
23	54.45	23	54.56	23	54.60
24	54.45	24	54.56	24	54.60
25	54.45	25	54.56	25	54.60
26	54.45	26	54.56	26	54.60
27	54.45	27	54.56	27	54.60
28	54.45	28	54.56	28	54.60
29	54.45	29	54.56	29	54.60
30	54.45	30	54.56	30	54.60
		31	54.56	31	54.60

* Measuring point elevation = 6503.8 feet.

Table II A-7g (Continued)*

FEBRUARY 1979		MARCH 1979	
1	54.60	1	54.60
2	54.60	2	54.60
3	54.60	3	54.60
4	54.60	4	54.60
5	54.60	5	54.60
6	54.60	6	54.60
7	54.60	7	54.60
8	54.60	8	54.60
9	54.60	9	54.60
10	54.60	10	54.60
11	54.60	11	54.60
12	54.60	12	54.60
13	54.60	13	54.60
14	54.60	14	54.60
15	54.60	15	54.60
16	54.60	16	54.60
17	54.60	17	54.60
18	54.60	18	54.60
19	54.60	19	54.60
20	54.60	20	54.60
21	54.60	21	54.68
22	54.60	22	54.63
23	54.60	23	54.63
24	54.60	24	54.63
25	54.60	25	54.63
26	54.60	26	54.63
27	54.60	27	54.63
28	54.60	28	54.63

* Measuring point elevation = 6503.8 feet.

Table II A-7h

STEVENS RECORDER DATA FROM ALLUVIAL WELL WA12

DAILY MAXIMUM DISTANCE IN FEET FROM TOP OF WELL TO WATER SURFACE *

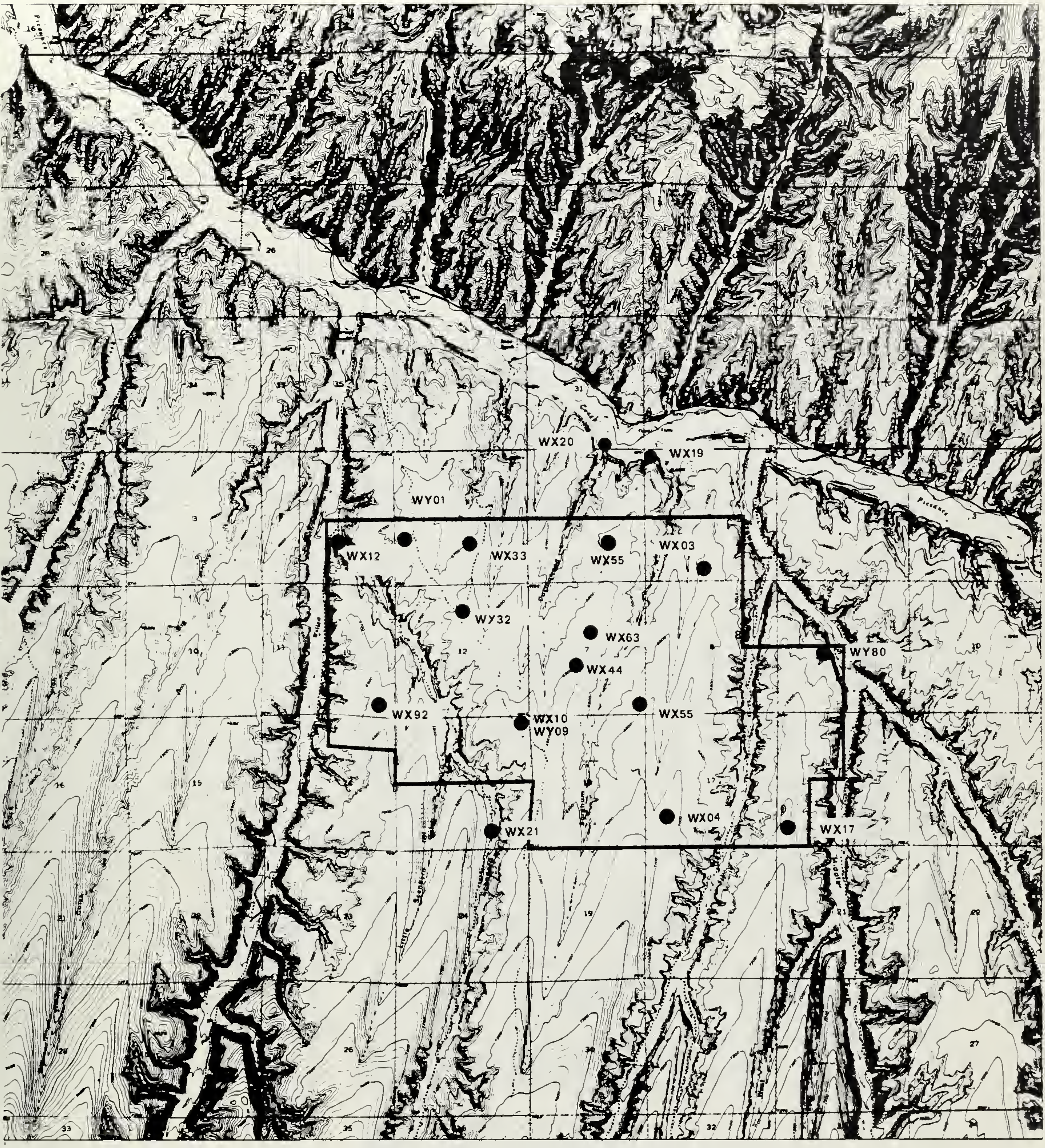
AUGUST 1978		SEPTEMBER 1978		OCTOBER 1978	
1	54.81	1		1	55.31
2	54.75	2		2	56.19
3	54.75	3		3	56.19
4	54.75	4		4	56.19
5	54.75	5		5	56.19
6	54.76	6	55.29	6	56.19
7	54.76	7	55.29	7	56.19
8	54.76	8	55.29	8	56.19
9	54.77	9	55.29	9	56.19
10	54.78	10	55.29	10	56.19
11	54.79	11	55.29	11	56.19
12	54.79	12	55.29	12	56.19
13	54.21	13	55.29	13	56.19
14	54.82	14	55.29	14	56.19
15	54.02	15	55.29	15	56.19
16	54.02	16	55.29	16	56.19
17	54.84	17	55.29	17	56.19
18	54.85	18	55.29	18	56.19
19	54.05	19	55.29	19	56.19
20	54.86	20	55.29	20	56.19
21	54.87	21	55.29	21	56.19
22	54.88	22	55.29	22	56.19
23	54.89	23	55.29	23	56.19
24	54.89	24	55.29	24	56.19
25	54.90	25	55.29	25	55.75
26	54.90	26	55.27	26	55.75
27	54.91	27	55.27	27	55.75
28	54.92	28	55.31	28	55.75
29	54.92	29	55.31	29	55.75
30	54.93	30	55.31	30	55.75
31	54.94			31	55.75

* Measuring point elevation = 6691.8 feet.

Table II A-7h (Continued)*

NOVEMBER 1978		DECEMBER 1978		JANUARY 1979	
1	55.75	1	56.41	1	56.43
2	55.75	2	56.41	2	56.50
3	55.75	3	56.41	3	56.50
4	55.75	4	56.41	4	56.50
5	55.75	5	56.41	5	56.50
6	55.75	6	56.41	6	56.50
7	55.75	7	56.41	7	56.50
8	55.76	8	56.41	8	56.50
9	55.76	9	56.41	9	56.50
10	55.76	10	56.41	10	56.50
11	55.76	11	56.41	11	56.50
12	55.76	12	56.41	12	56.50
13	55.76	13	56.41	13	56.50
14	55.77	14	56.41	14	56.50
15	55.77	15	56.41	15	56.50
16	55.77	16	56.41	16	56.50
17	55.77	17	56.41	17	56.50
18	55.77	18	56.43	18	56.50
19	55.77	19	56.43	19	56.50
20	55.77	20	56.43	20	
21	55.77	21	56.43	21	
22	55.77	22	56.43	22	
23	55.78	23	56.43	23	
24	55.78	24	56.43	24	
25	55.78	25	56.43	25	
26	55.78	26	56.43	26	
27	55.78	27	56.43	27	
28	55.78	28	56.43	28	
29	55.78	29	56.43	29	
30	55.78	30	56.43	30	
		31	56.43	31	

* Measuring point elevation = 6691.8 feet.



DEEP WELL MONITORING NETWORK
Cb TRACT

Figure II A-6

Table II A-8

CB-TRACT
WATER LEVELS IN UPPER AQUIFER WELLS
FOR SAMPLE DATE SHOWN

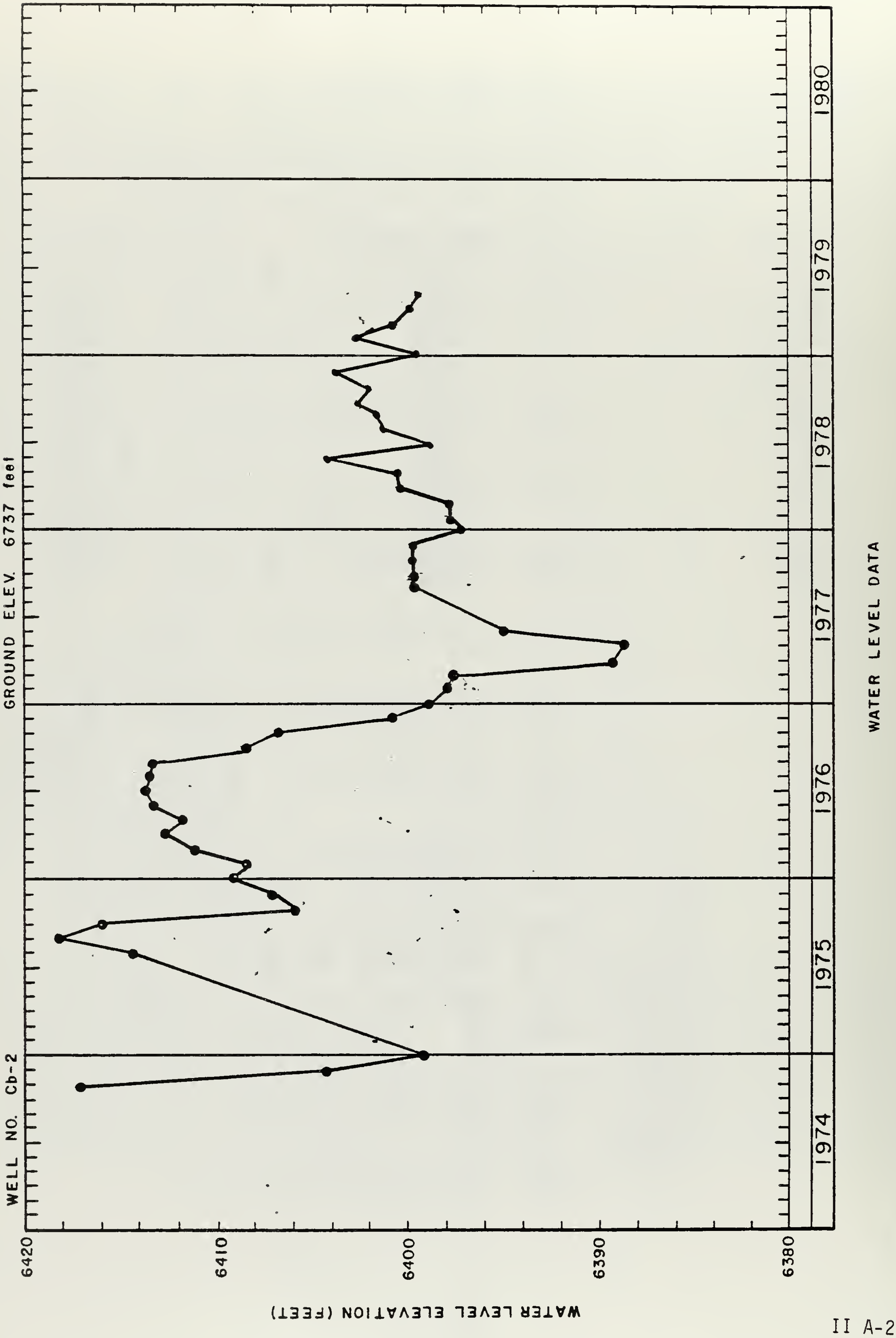
		WELL ID - GROUND LEVEL ELEV. (FT) - M.P. ELEV. (FT)														
		WX02	WX04	WX10	WX12	WX17	WX18	WX19	WX20	WX21	WX32	WX33	WX44	WX55	WX63	WX92
		6737.0	7054.0	6950.0	6428.0	7036.0	7383.0	6384.0		6811.0	6830.3	6707.1	6905.0	6900.0	6888.0	6870.0
		6737.0	7057.3	6953.6	6428.6	7038.6	7386.6	6384.4		6813.3	6830.3	6707.1	6906.0	6903.1	6890.7	6873.0
YR	MO	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)
78	1	6397.8	-1.0	-1.0	6357.3	-1.0	-1.0	-1.0	-2.0	-1.0	6474.5	6393.1	-1.0	-1.0	6559.7	-1.0
	2	6397.8	-1.0	-1.0	6357.3	-1.0	-1.0	-1.0	-2.0	-1.0	6474.3	6393.1	-1.0	-1.0	6550.7	-1.0
	3	6400.5	-1.0	6576.6	-1.0	-1.0	-1.0	6373.5	-2.0	-1.0	6474.3	6393.3	-1.0	6517.3	6553.7	6518.4
	4	6400.8	6631.2	6576.6	6356.4	6639.5	-1.0	6374.3	-2.0	6704.4	6477.9	6393.3	-1.0	6516.2	6550.2	6520.2
	5	6404.2	6627.3	6573.4	6365.6	6635.5	-1.0	6375.2	-2.0	6703.0	6474.3	6392.0	-1.0	6548.3	6508.4	6521.2
	6	6399.3	6320.0	-1.0	6366.1	-1.0	-1.0	6375.8	-2.0	6706.1	6454.3	6387.8	-1.0	6552.1	6507.7	6498.0
	7	6401.5	6628.5	-1.0	6366.5	6637.5	-1.0	6376.4	-2.0	6705.5	6476.5	6394.1	-1.0	6551.6	6507.2	6496.8
	8	6402.0	6628.6	-1.0	6365.8	6637.2	-1.0	6374.1	-2.0	6704.9	6476.2	6393.6	-1.0	6551.5	6507.1	6496.7
	9	6403.1	-1.0	-1.0	6366.6	6638.9	-1.0	6375.1	-2.0	6705.4	6469.6	6379.0	-1.0	6554.0	6507.5	6496.6
	10	6402.8	6629.2	-1.0	6367.8	6638.7	-1.0	6375.3	-2.0	6705.2	6470.4	6380.0	-1.0	6543.1	6507.1	6496.5
	11	6404.4	6627.1	6578.8	6348.5	6634.3	-1.0	6373.3	-2.0	6705.0	6470.1	6378.6	-1.0	6554.9	6511.4	6496.0
	12	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
79	1	6398.9	6627.5	6579.3	6353.5	6636.0	6899.5	6374.1	-2.0	6706.6	6470.9	6379.8	6536.2	-5.0	6513.4	6496.4
	2	6402.6	6627.6	6580.9	-1.0	6636.7	6899.3	6364.7	-2.0	6705.5	6470.2	6380.5	6541.9	6563.9	6510.8	6500.0
	3	6400.5	6633.1	6580.4	6364.9	-1.0	6901.1	6373.5	-2.0	6706.1	6471.6	6374.2	6541.3	6563.1	6508.5	6498.5
	4	6399.7	6628.0	6580.1	-1.0	6637.4	6898.6	-1.0	-1.0	-1.0	6471.8	6365.4	6541.2	6563.2	6509.7	6499.1

NOTE:
-1.0 INDICATES NOT SAMPLED
-2.0 INDICATES WELL IS FLOWING
-3.0 INDICATES WELL IS DRY
-4.0 INDICATES WELL IS PLUGGED
-5.0 INDICATES INSTRUMENT MALFUNCTION

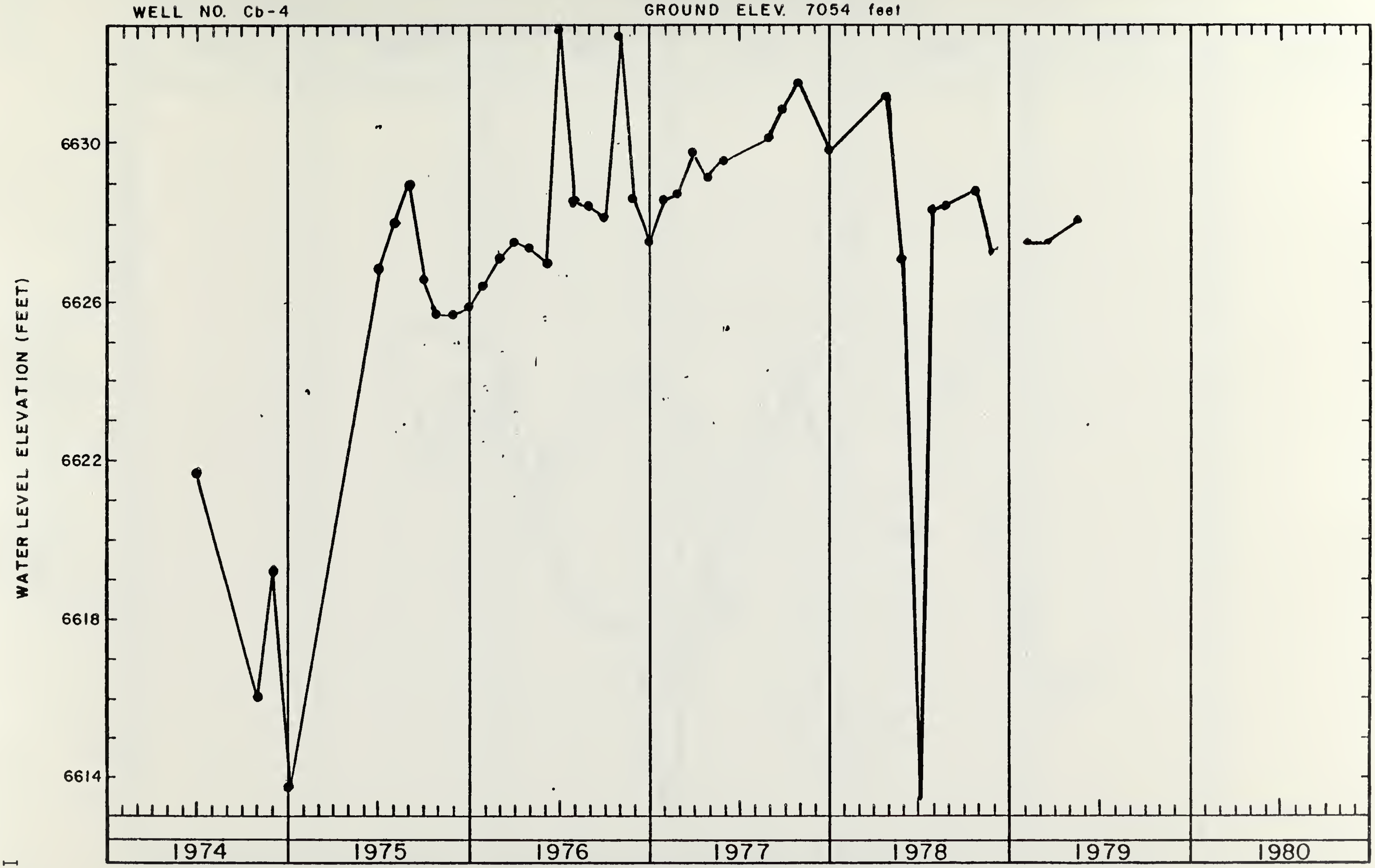
Table II A-9

HAND PLOTS OF WATER LEVELS IN UPPER AQUIFER WELLS

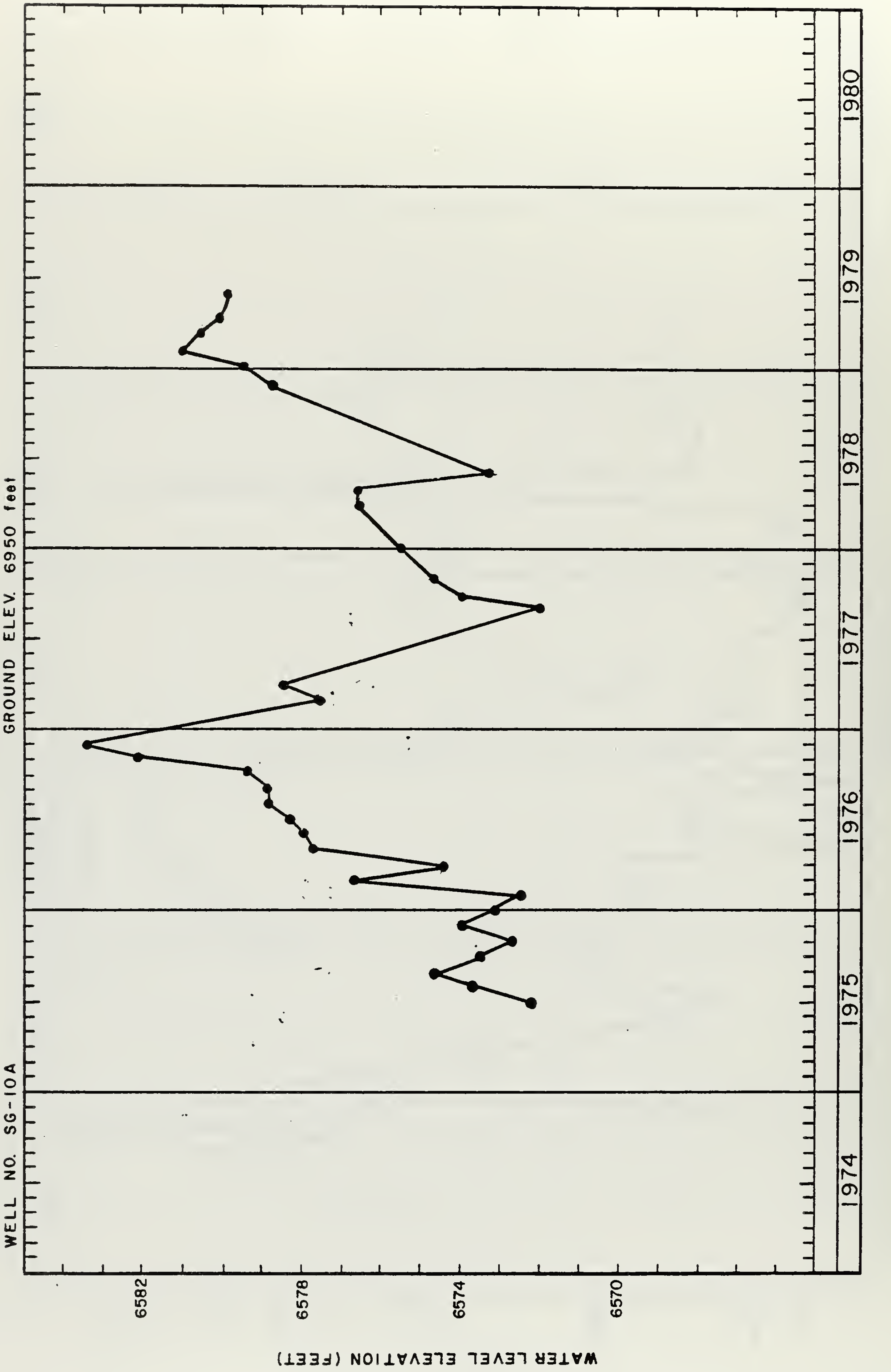
Well No.	Computer Code	Page No.
Cb-2	WX02	II A-248
Cb-4	WX04	II A-249
SG-10A	WX10	II A-250
SG-1-2	WX12	II A-251
SG-17-2	WX17	II A-252
SG-18A	WX18	II A-253
SG-19	WX19	II A-254
SG-20	WX20	II A-255
SG-21	WX21	II A-256
32X-12	WX32	II A-257
33X-1	WX33	II A-258
AT-1C-3	WX44	II A-259
SG-11-3	WX55	II A-260
SG-6-3	WX63	II A-261
SG-9-2	WX92	II A-262



WATER LEVEL DATA

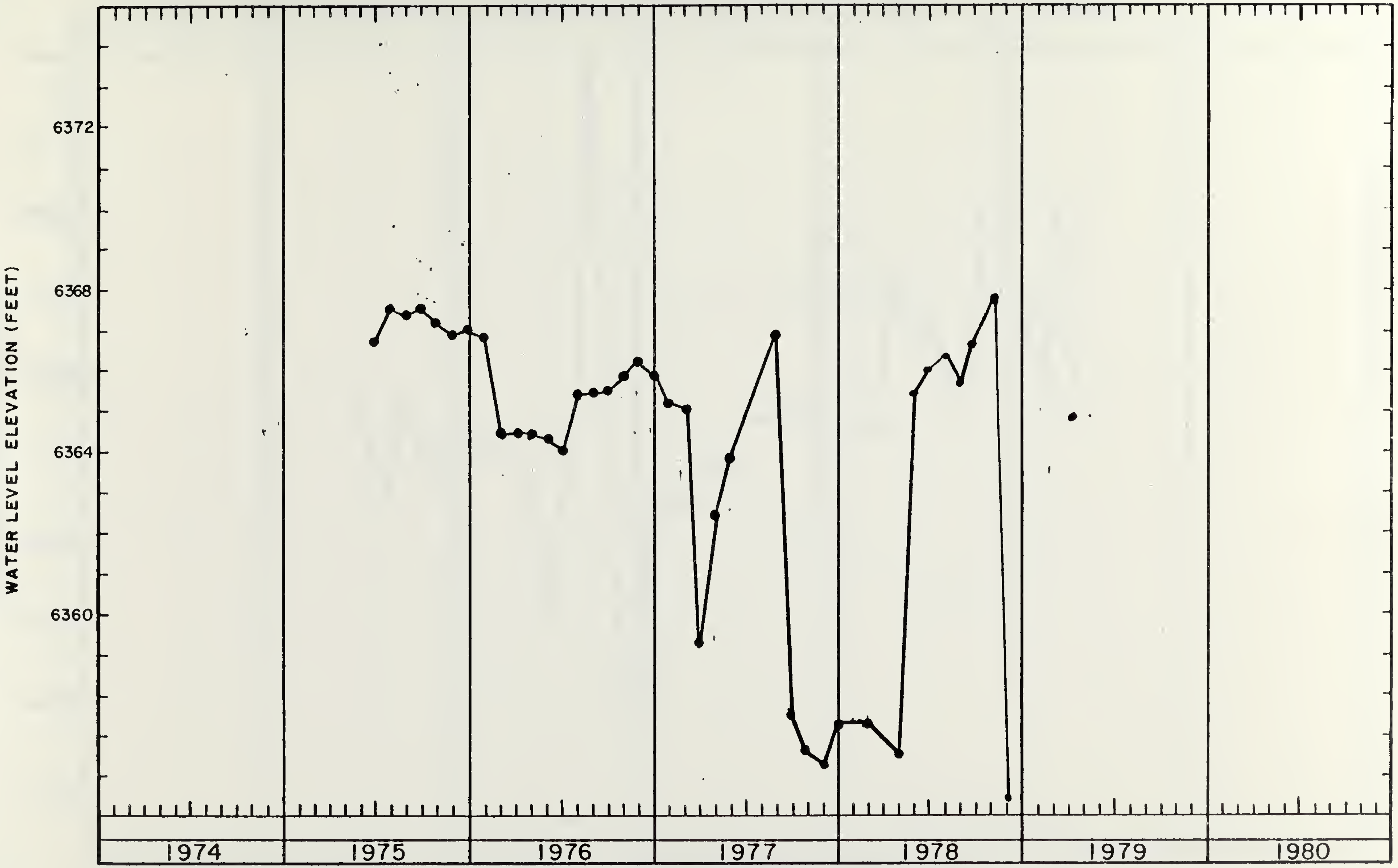


WATER LEVEL DATA

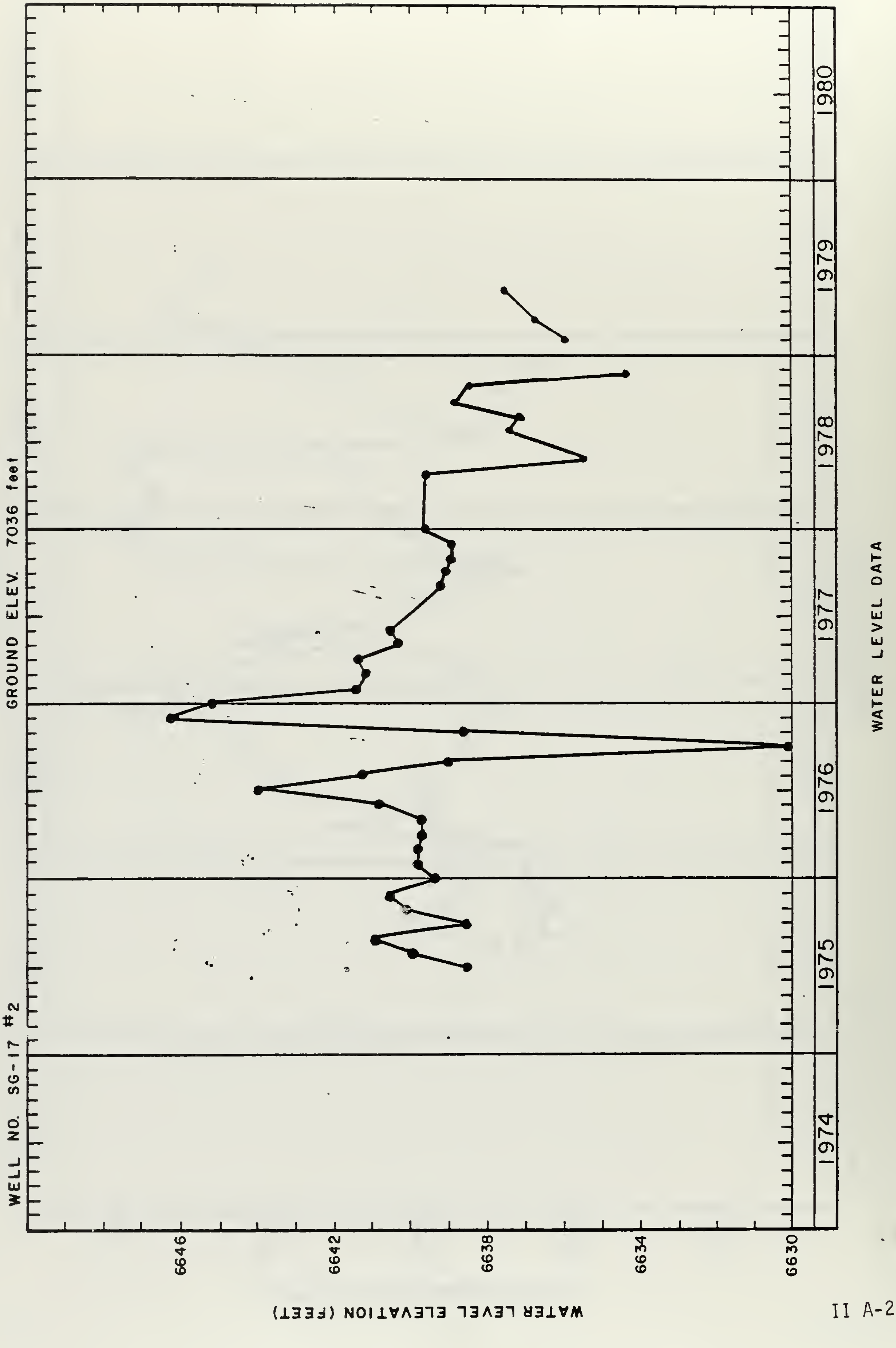


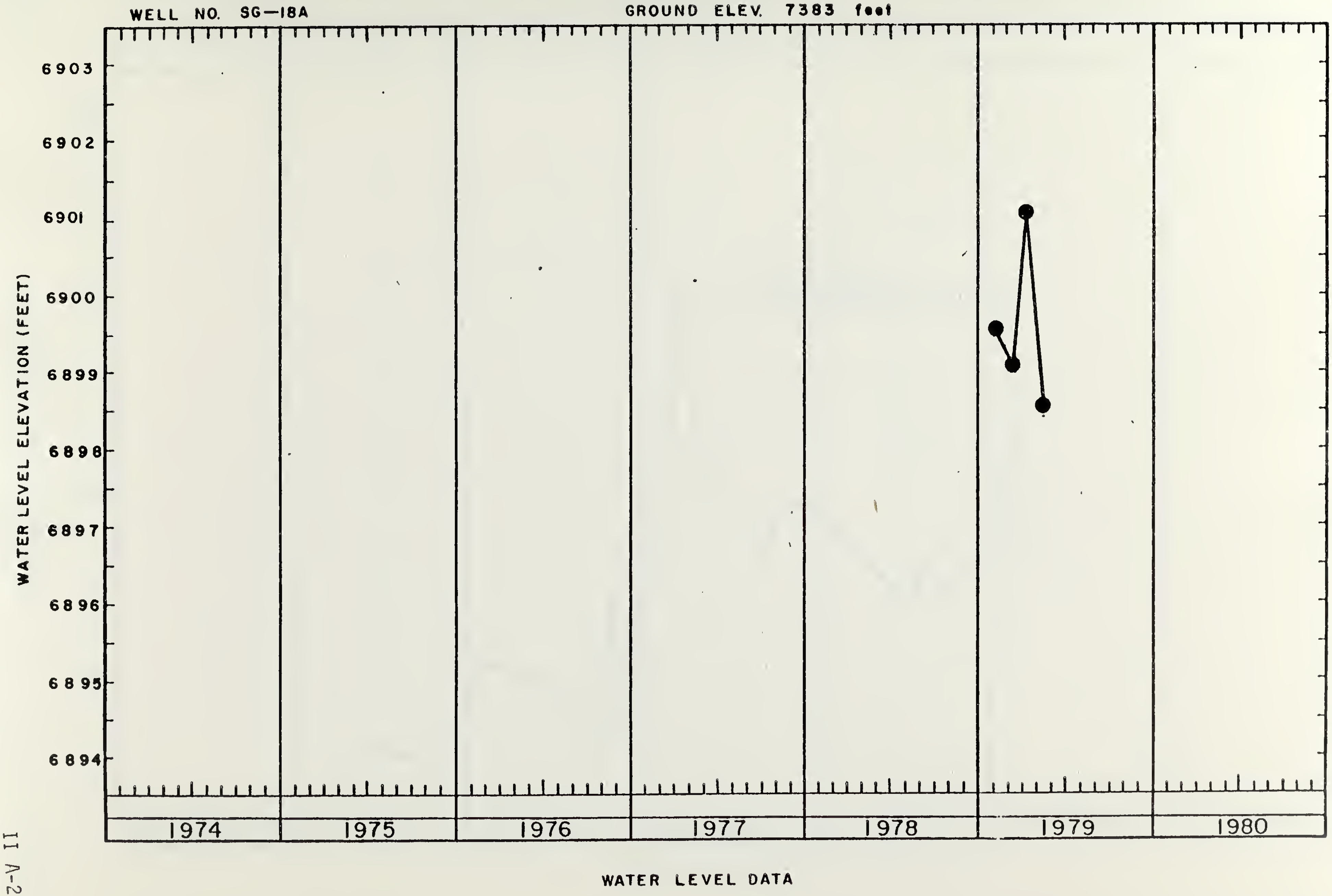
WATER LEVEL DATA

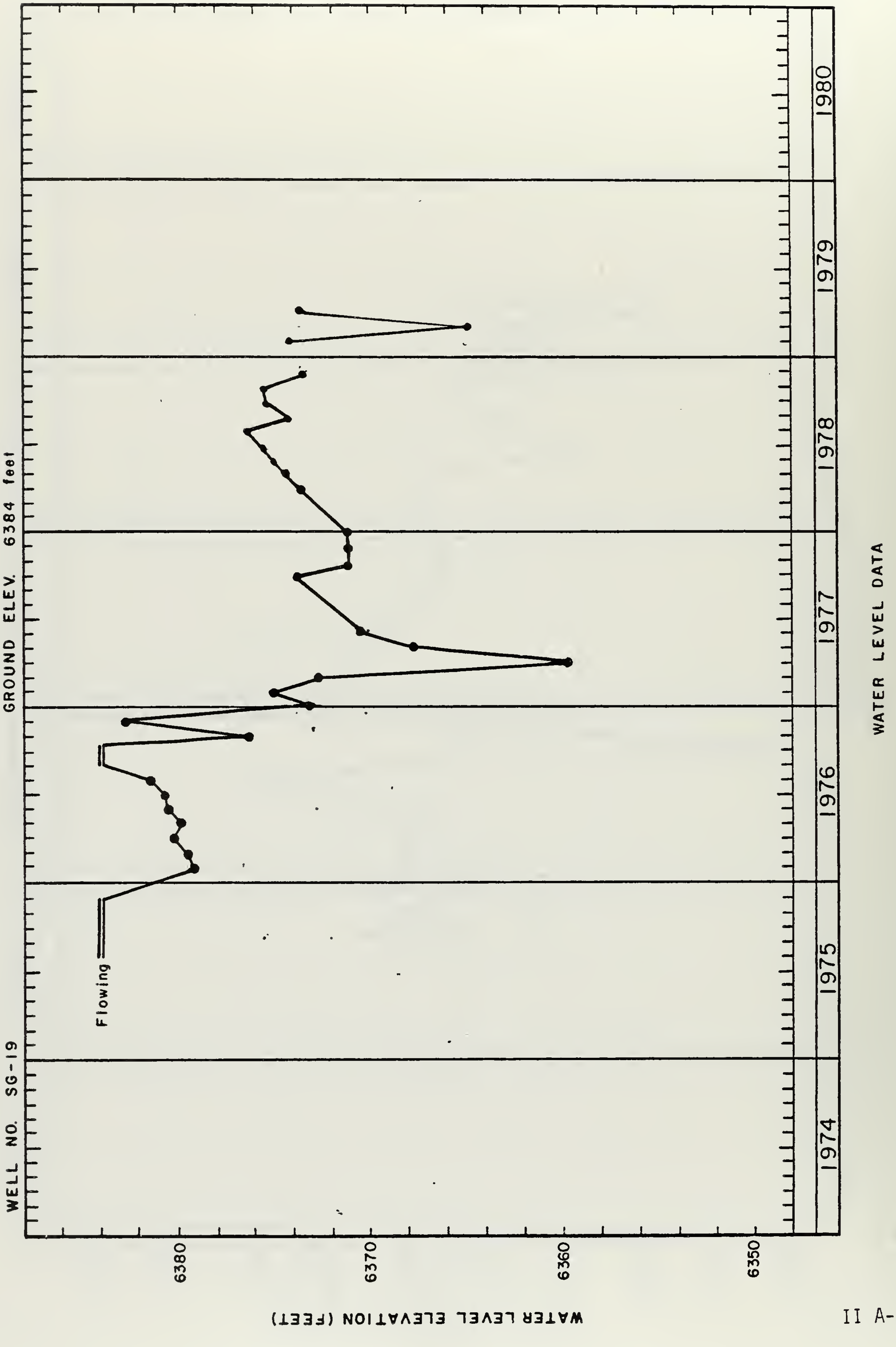
WELL NO. SG-1 #2 GROUND ELEV. 6428 feet

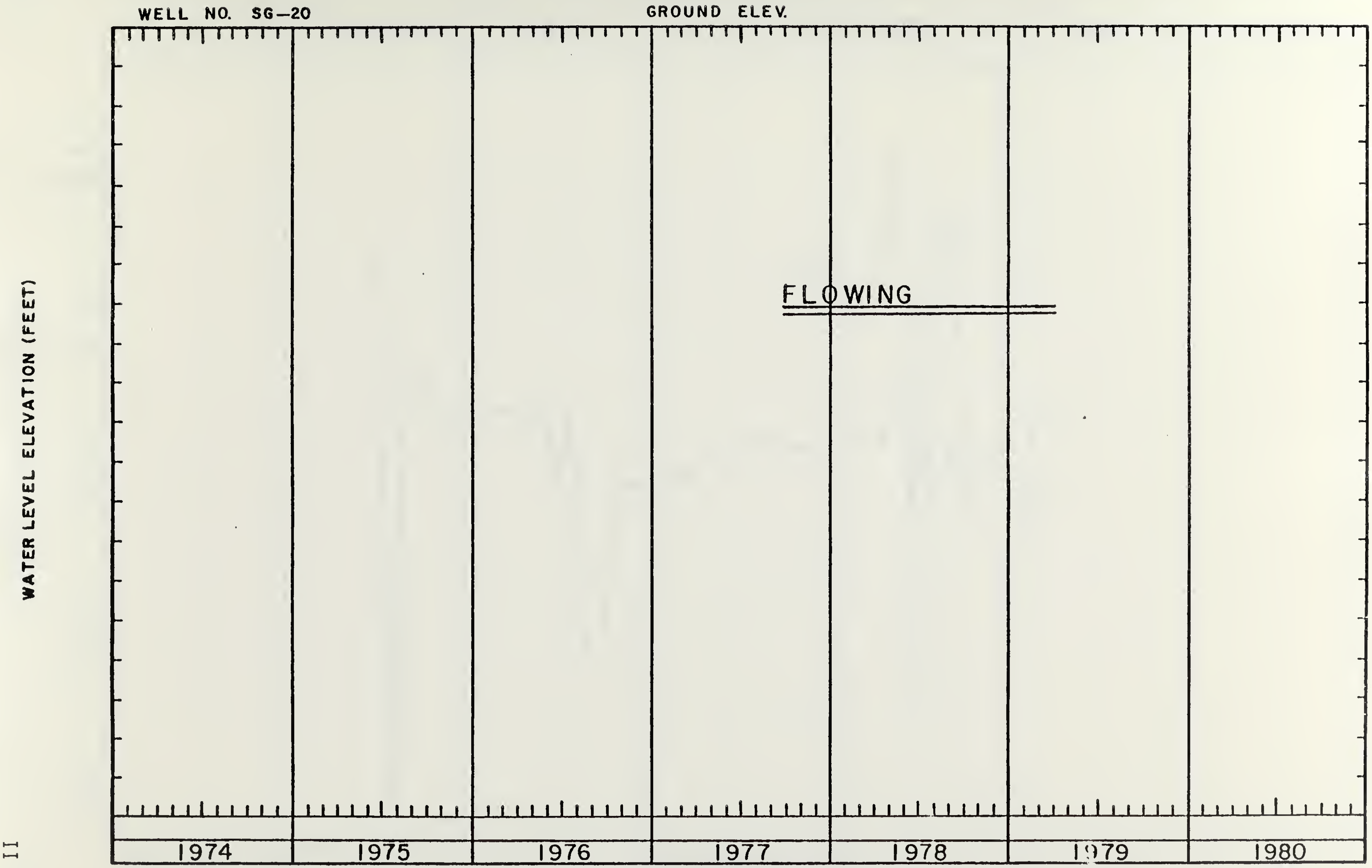


WATER LEVEL DATA

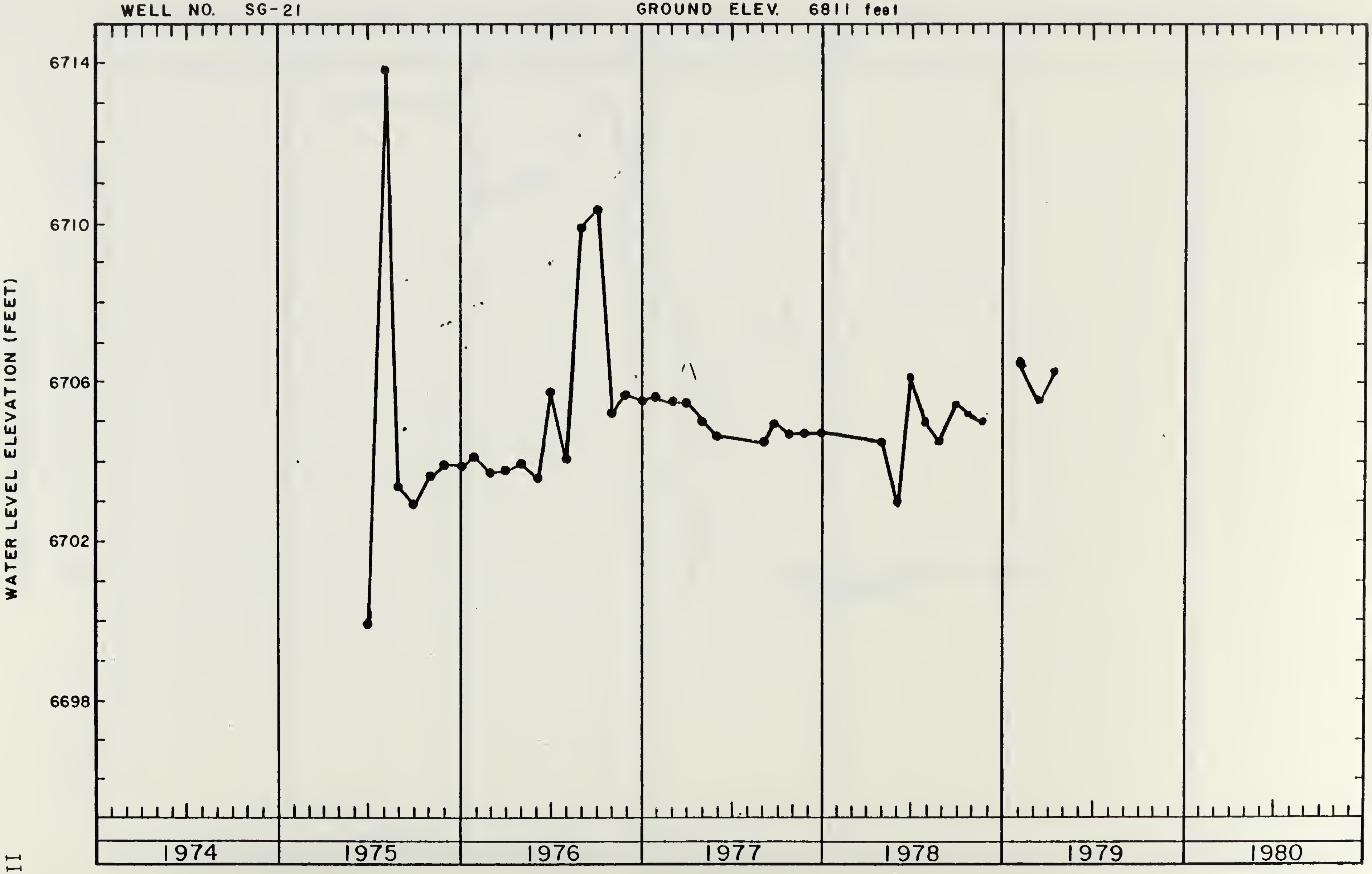

WELL NO. SG-17 #2
GROUND ELEV. 7036 feet
WATER LEVEL DATA
WATER LEVEL ELEVATION (FEET)
6646
6642
6638
6634
6630
1974
1975
1976
1977
1978
1979
1980


WELL NO. SG—18A
GROUND ELEV. 7383 feet
6903
6902
6901
6900
6899
6898
6897
6896
6895
6894
WATER LEVEL ELEVATION (FEET)
1974
1975
1976
1977
1978
1979
1980
WATER LEVEL DATA

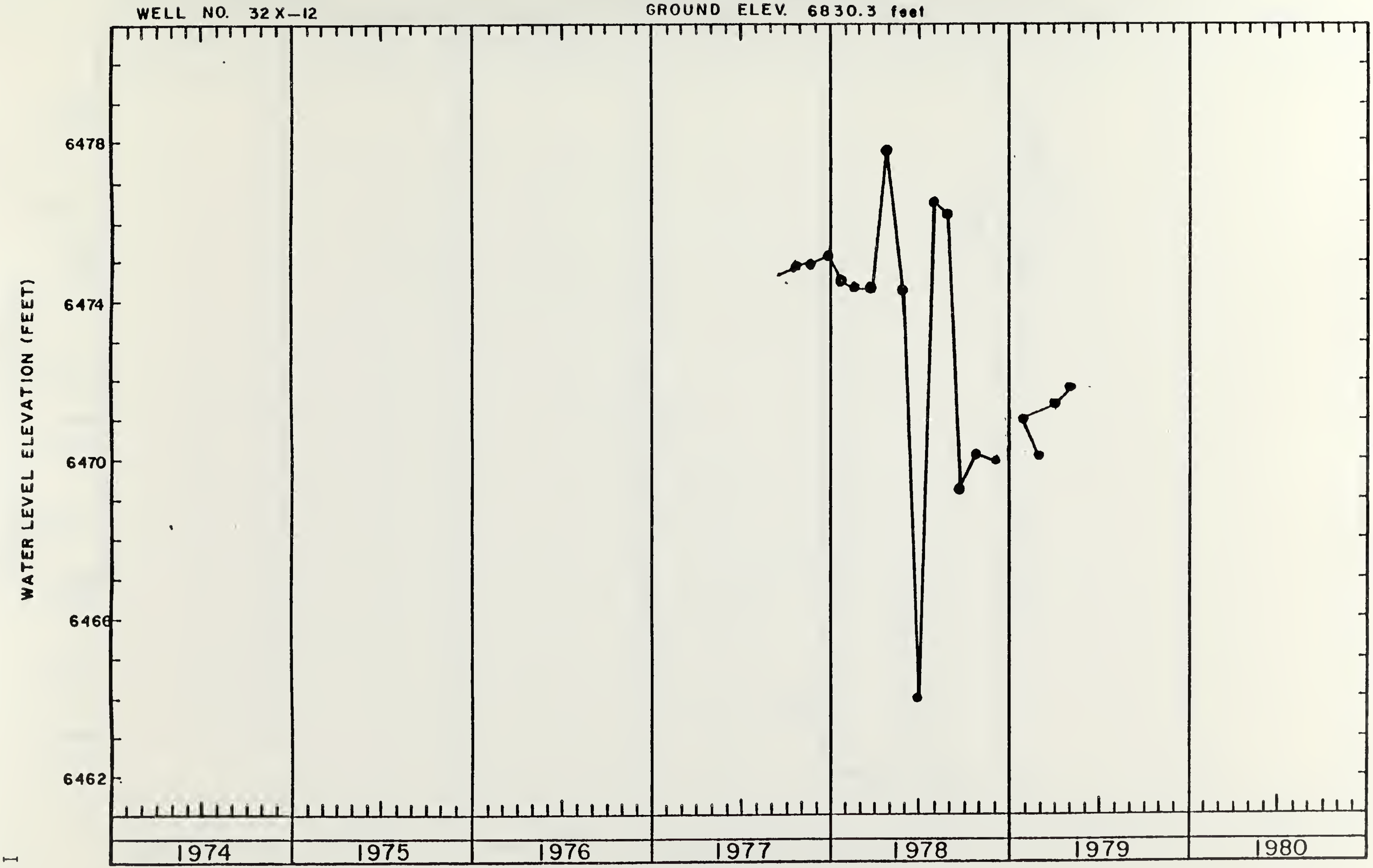

WELL NO. SG-19
GROUND ELEV. 6384 feet
Flowing
1974
1975
1976
1977
1978
1979
1980
6380
6370
6360
6350
WATER LEVEL ELEVATION (FEET)
WATER LEVEL DATA



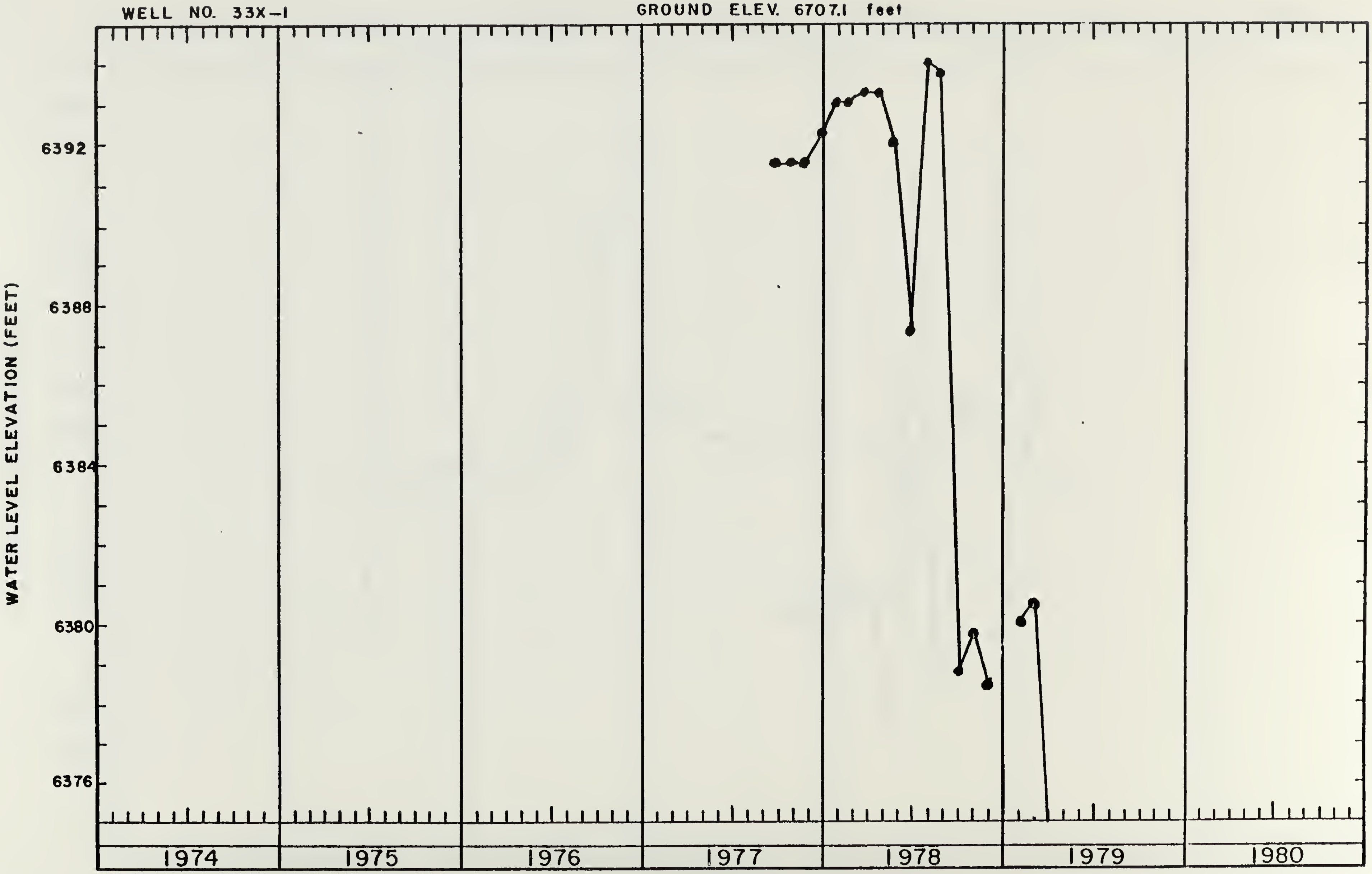
WATER LEVEL DATA



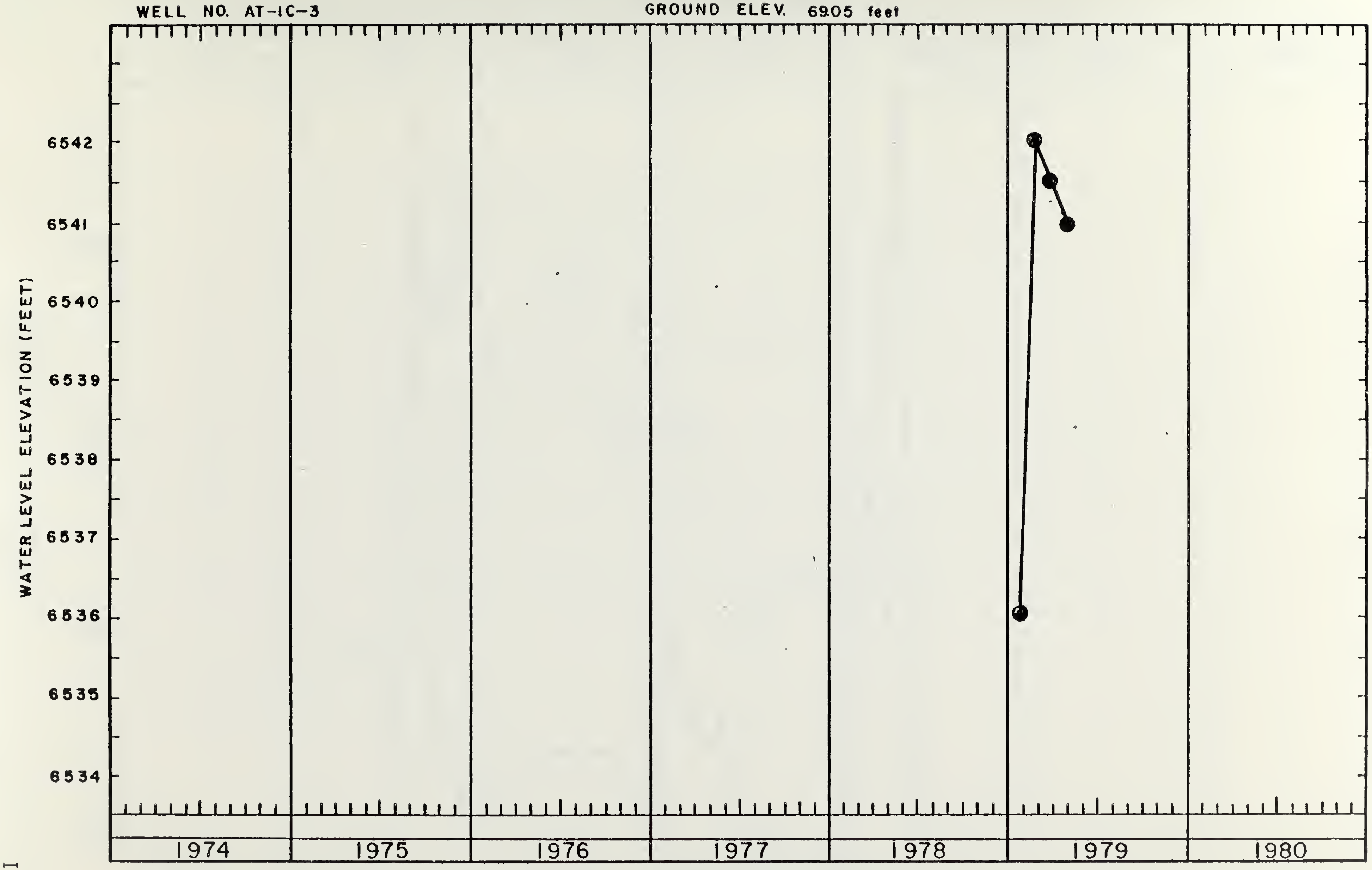
WATER LEVEL DATA



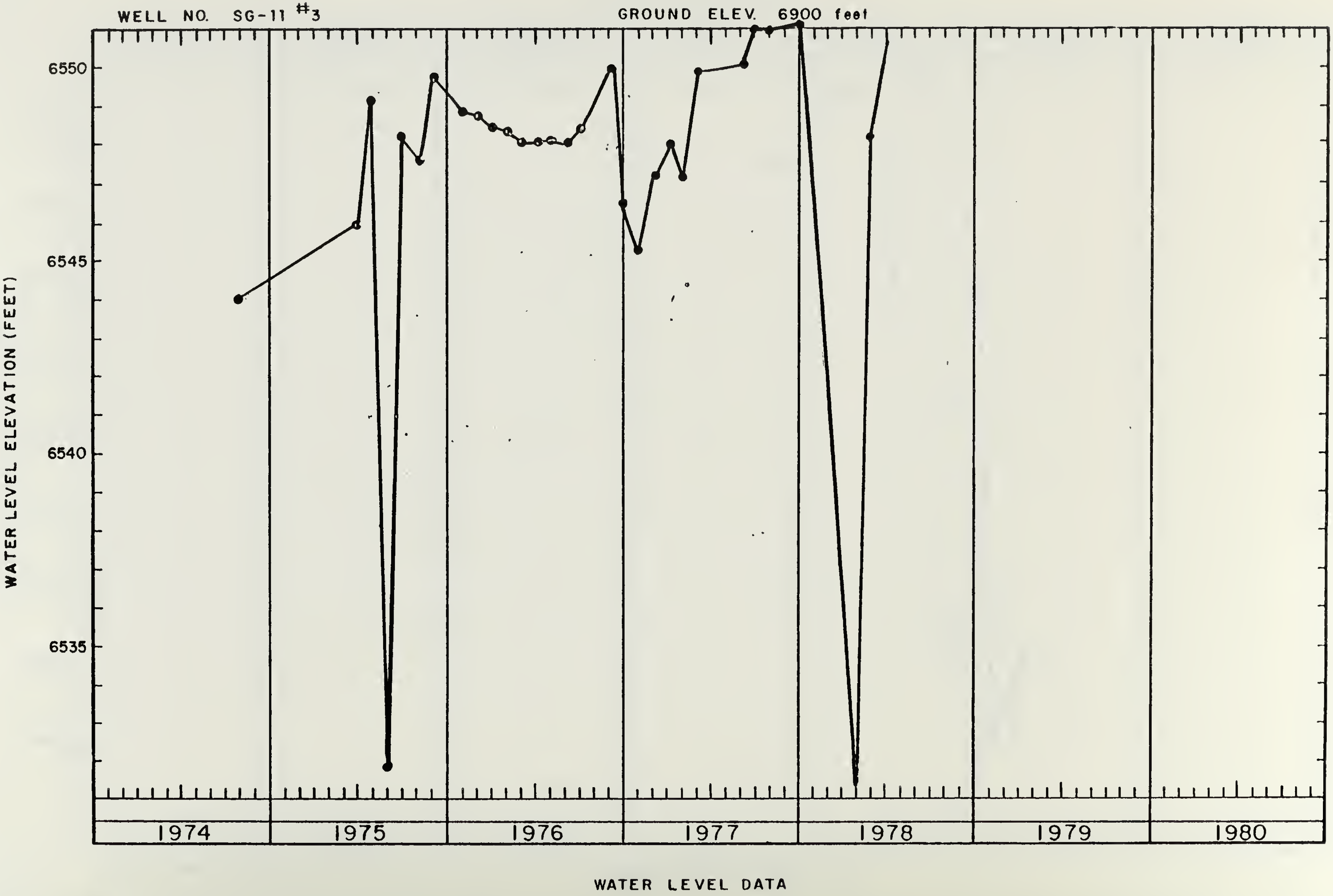
WATER LEVEL DATA

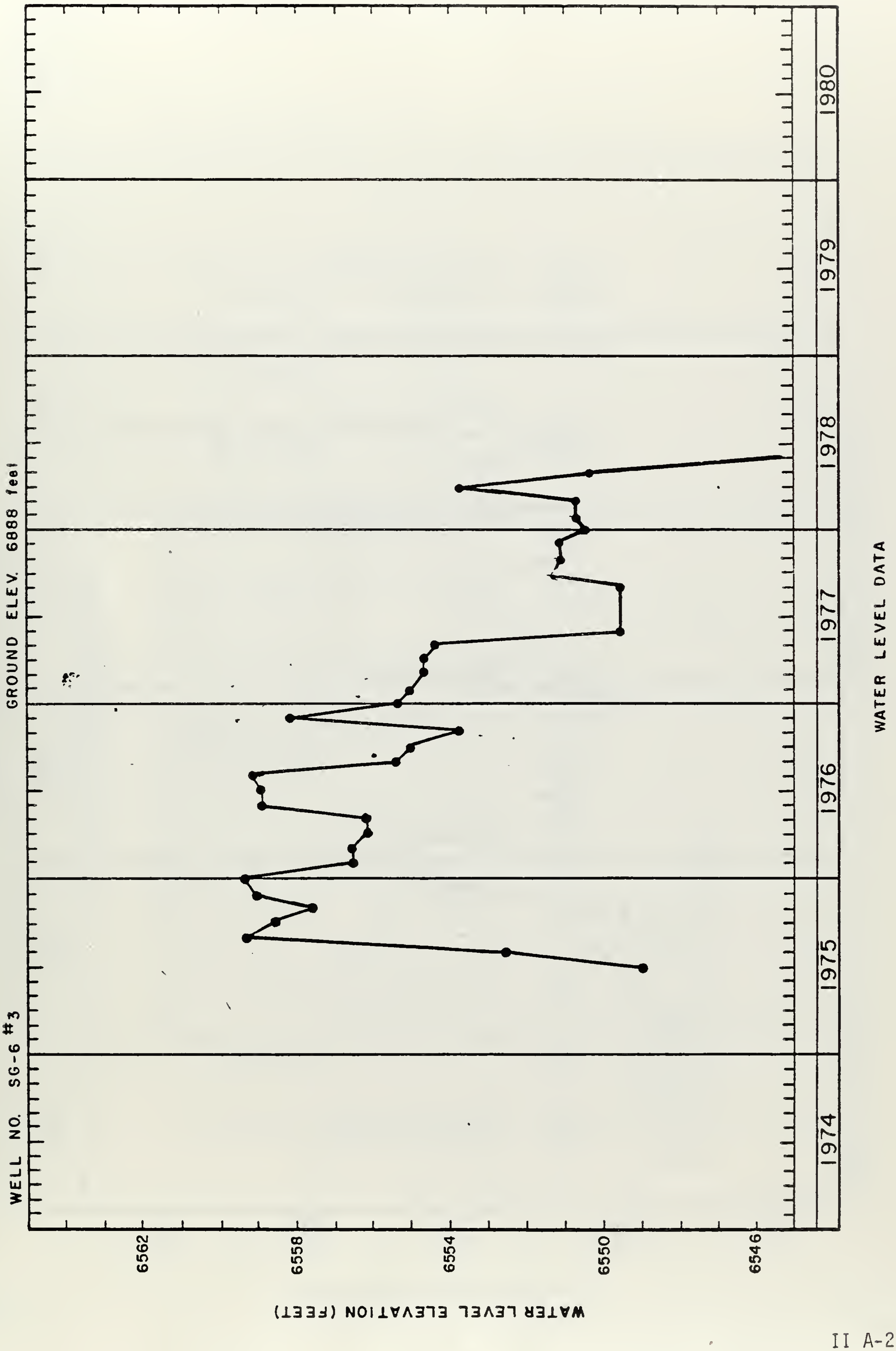


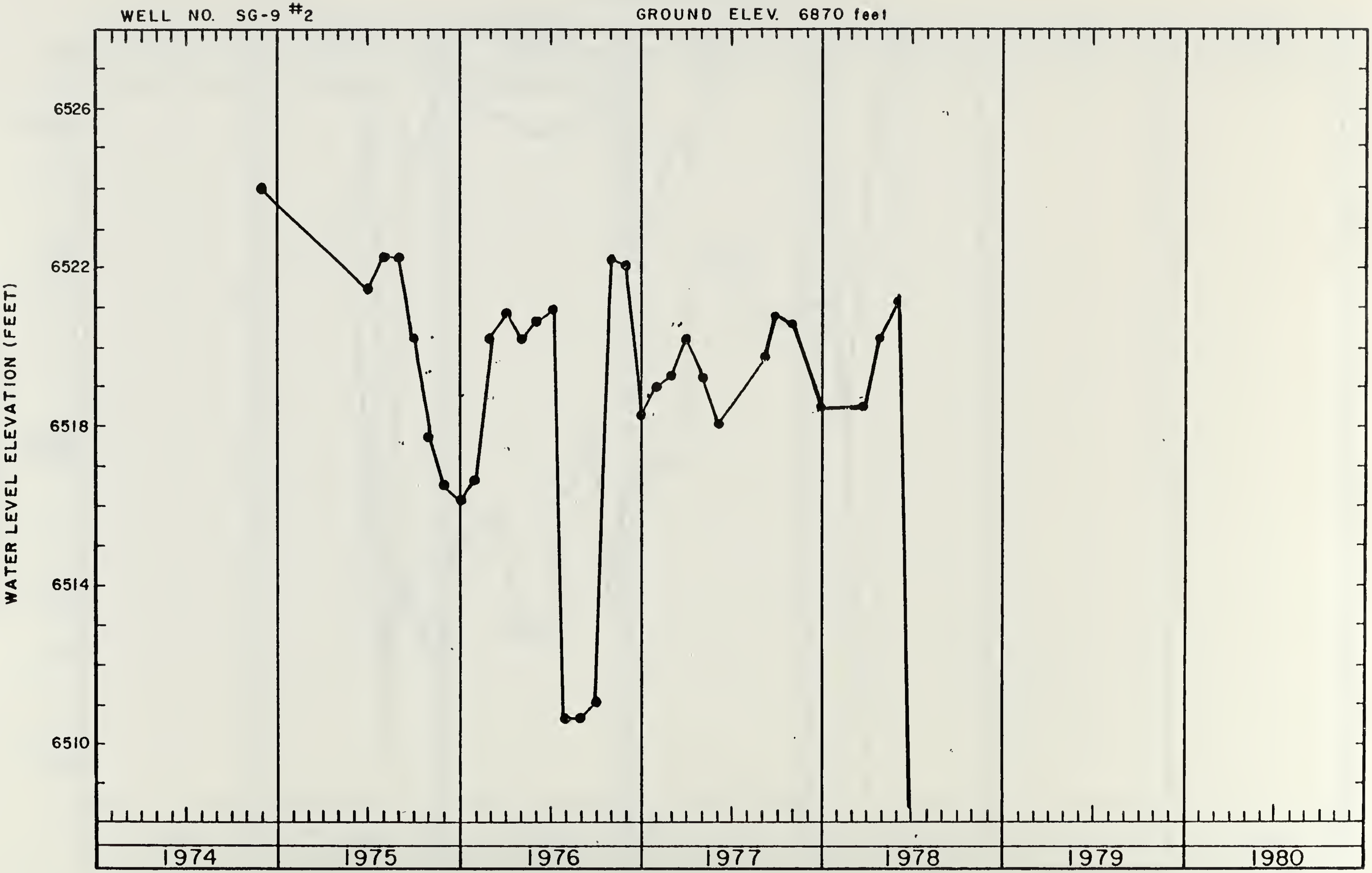
WATER LEVEL DATA



WATER LEVEL DATA


WELL NO. SG-11 #3
GROUND ELEV. 6900 feet
WATER LEVEL ELEVATION (FEET)
6550
6545
6540
6535
1974
1975
1976
1977
1978
1979
1980
WATER LEVEL DATA


WELL NO. SG-6 #3
GROUND ELEV. 6888 feet
WATER LEVEL DATA
WATER LEVEL ELEVATION (FEET)
6562
6558
6554
6550
6546
1974
1975
1976
1977
1978
1979
1980



WATER LEVEL DATA

Table II A-10

PAGE 1

CB-TRACT
WATER LEVELS IN LOWER AQUIFER WELLS
FOR SAMPLE DATE SHOWN

WELL ID - GROUND LEVEL ELEV. (FT) - M.P. ELEV. (FT)

YR	MO	WY01	WY10	WY12	WY17	WY45	WY46	WY52	WY54	WY61	WY62	WY81	WY91
		6760.0	6950.0	6428.0	7036.0	6905.0	6905.0	6900.0	6900.0	6888.0	6888.0	6538.0	6870.0
		6763.4	6952.5	6428.8	7038.6	6906.0	6906.0	6903.1	6903.1	6890.7	6890.7	6540.8	6873.0
		DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)	DEPTH (FT)
78	1	6404.1	-1.0	6365.1	-1.0	6514.8	-1.0	-1.0	-1.0	6507.9	-1.0	-2.0	-4.0
	2	6404.1	-1.0	6365.1	-1.0	6514.8	-1.0	-1.0	-1.0	6507.9	-1.0	-2.0	-4.0
	3	6403.8	-1.0	-1.0	-1.0	6514.9	-1.0	6517.3	-1.0	6598.1	-1.0	-2.0	-4.0
	4	6403.5	-1.0	6366.6	6644.4	6514.7	-1.0	6540.9	-1.0	6508.2	-1.0	-2.0	-4.0
	5	6400.3	-1.0	6357.2	6641.4	6514.2	-1.0	6512.9	-1.0	6560.6	-1.0	-2.0	6497.9
	6	6403.1	-1.0	6350.3	-1.0	6513.6	-1.0	6518.4	-1.0	6550.3	-1.0	-2.0	6519.2
	7	6402.7	-1.0	6350.9	6644.2	6513.8	-1.0	6517.8	-1.0	6549.5	-1.0	-2.0	6519.7
	8	6402.3	-4.0	6350.5	6644.0	6513.9	-1.0	6517.6	-1.0	6549.6	-1.0	-2.0	6519.9
	9	6403.9	-4.0	6350.8	6645.1	6513.7	-1.0	6520.3	-1.0	6551.7	-1.0	-2.0	6520.0
	10	6403.6	-4.0	6351.9	6644.7	6513.8	-1.0	6518.0	-1.0	6548.9	-1.0	-2.0	-1.0
	11	6482.4	-4.0	6367.6	6648.1	6510.6	-1.0	6516.5	-1.0	6548.4	-1.0	-2.0	6517.5
	12	-1.0	-4.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
79	1	6404.7	-4.0	6366.8	6647.4	6512.7	6518.9	6521.7	6546.6	6547.9	6489.3	-2.0	6520.0
	2	6402.9	6537.0	6366.5	6648.5	6514.4	6513.1	6521.1	6545.8	6548.0	6529.3	-2.0	6523.1
	3	6400.7	6536.7	6353.7	-1.0	6513.4	6514.1	6523.4	6547.2	6551.9	6491.4	-2.0	6523.6
	4	6403.6	-4.0	6365.4	6650.1	6514.3	6513.1	6515.6	6543.9	6548.8	6528.6	-2.0	6523.2

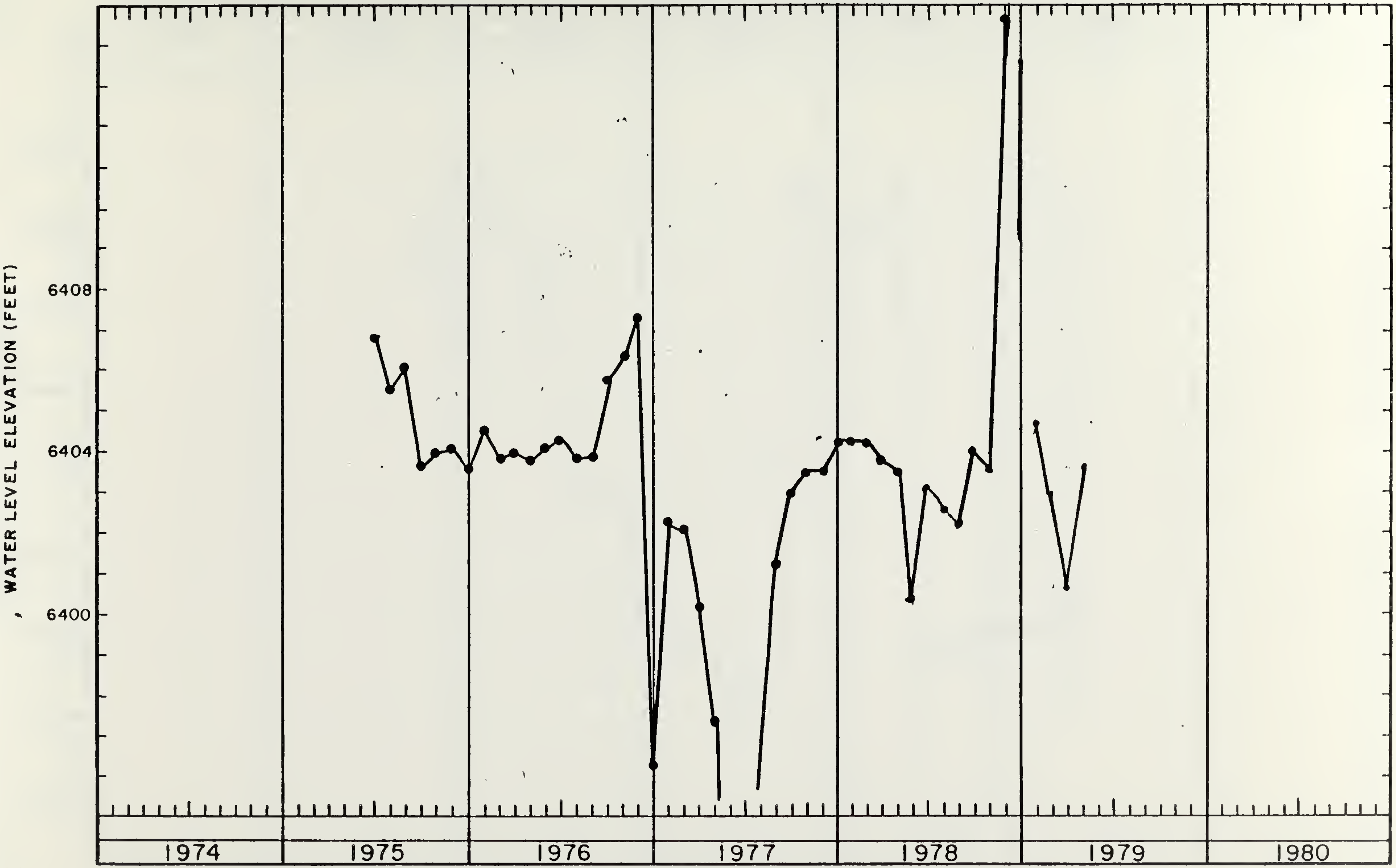
NOTE: -1.0 INDICATES NOT SAMPLED
-2.0 INDICATES WELL IS FLOWING
-3.0 INDICATES WELL IS DRY
-4.0 INDICATES WELL IS PLUGGED
-5.0 INDICATES INSTRUMENT MALFUNCTION

Table II A-11

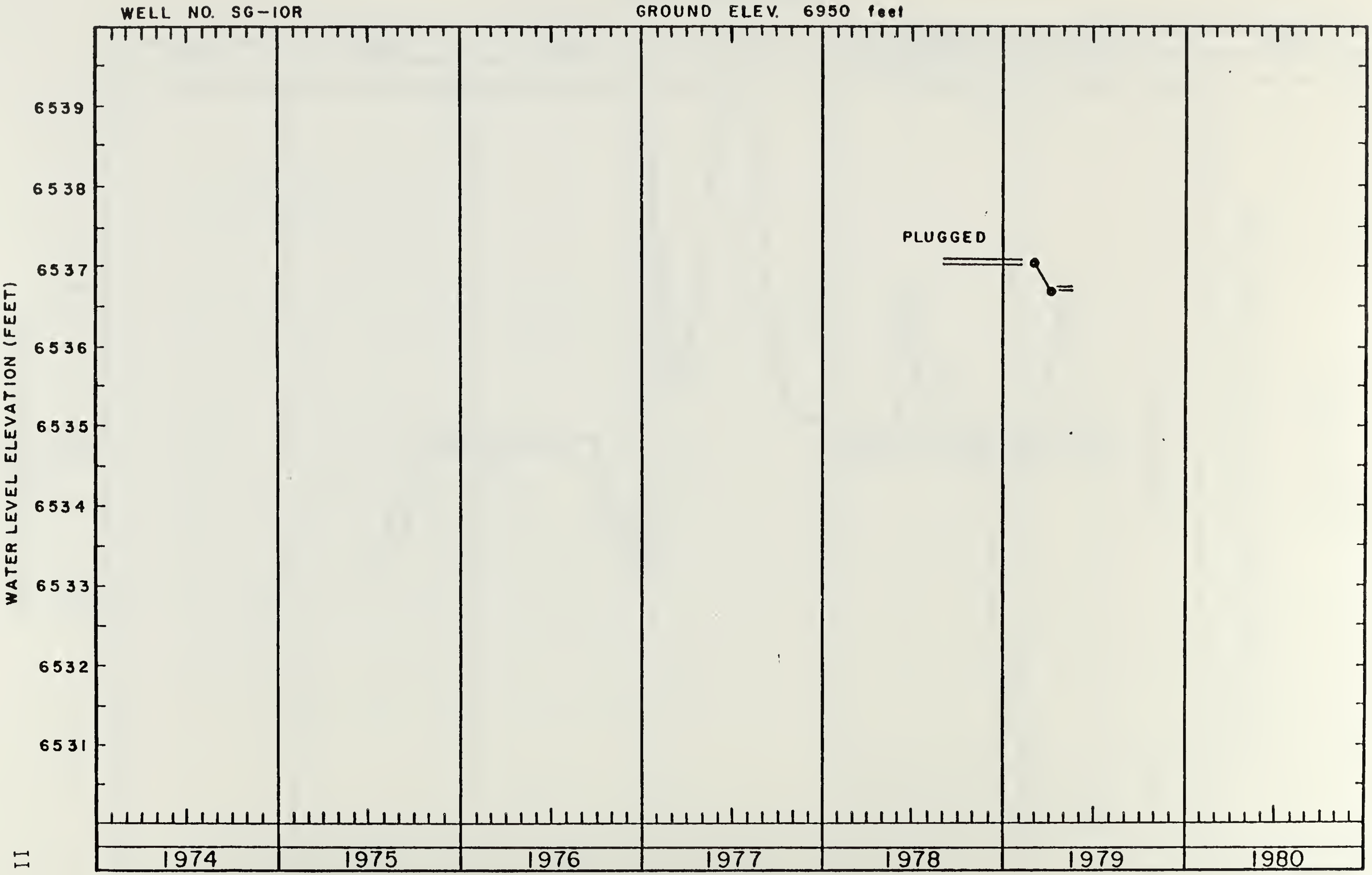
HAND PLOTS OF WATER LEVELS IN LOWER AQUIFER WELLS

Well No.	Computer Code	Page No.
Cb-1	WY01	II A-265
SG-10R	WY10	II A-266
SG-1-1	WY12	II A-267
SG-17-1R	WY17	II A-268
AT-1C-1	WY45	II A-269
AT-1C-2	WY46	II A-270
SG-11-1R	WY52	II A-271
SG-11-2	WY54	II A-272
SG-6-1	WY61	II A-273
SG-6-2	WY62	II A-274
SG-8R	WY81	II A-275
SG-9-1	WY91	II A-276

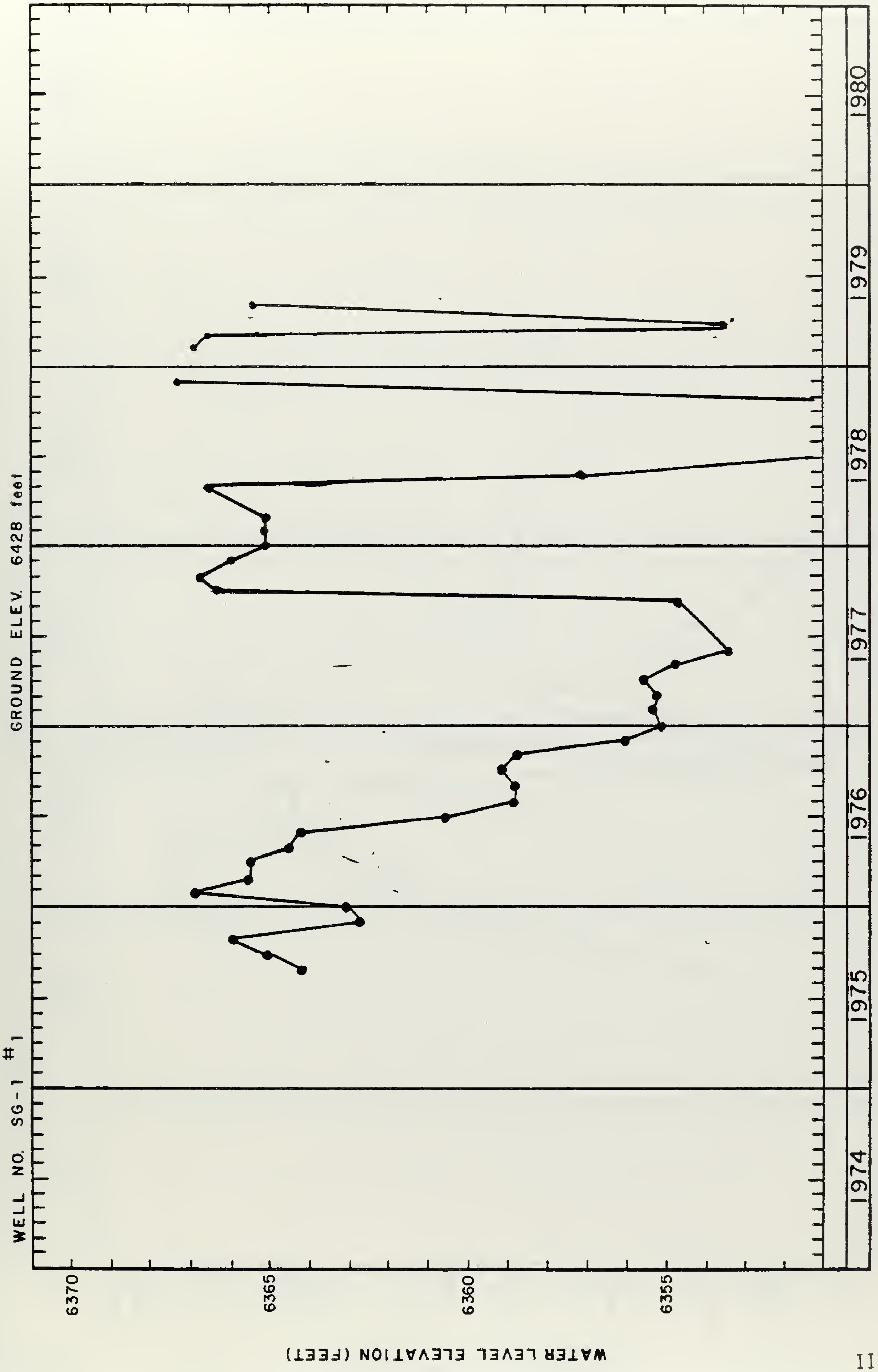
WELL NO. Cb-1 GROUND ELEV. 6760 feet



WATER LEVEL DATA



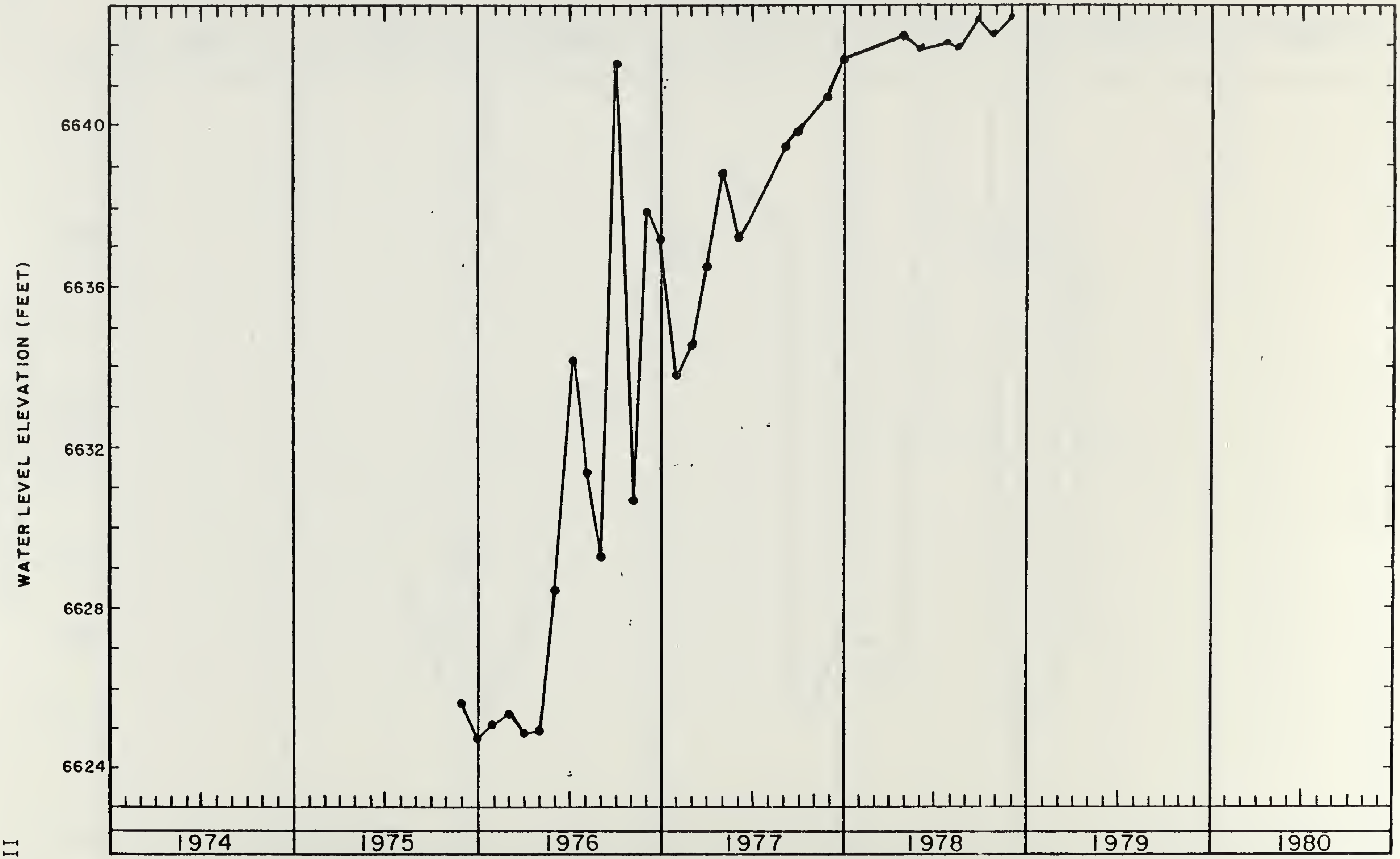
WATER LEVEL DATA



WATER LEVEL DATA

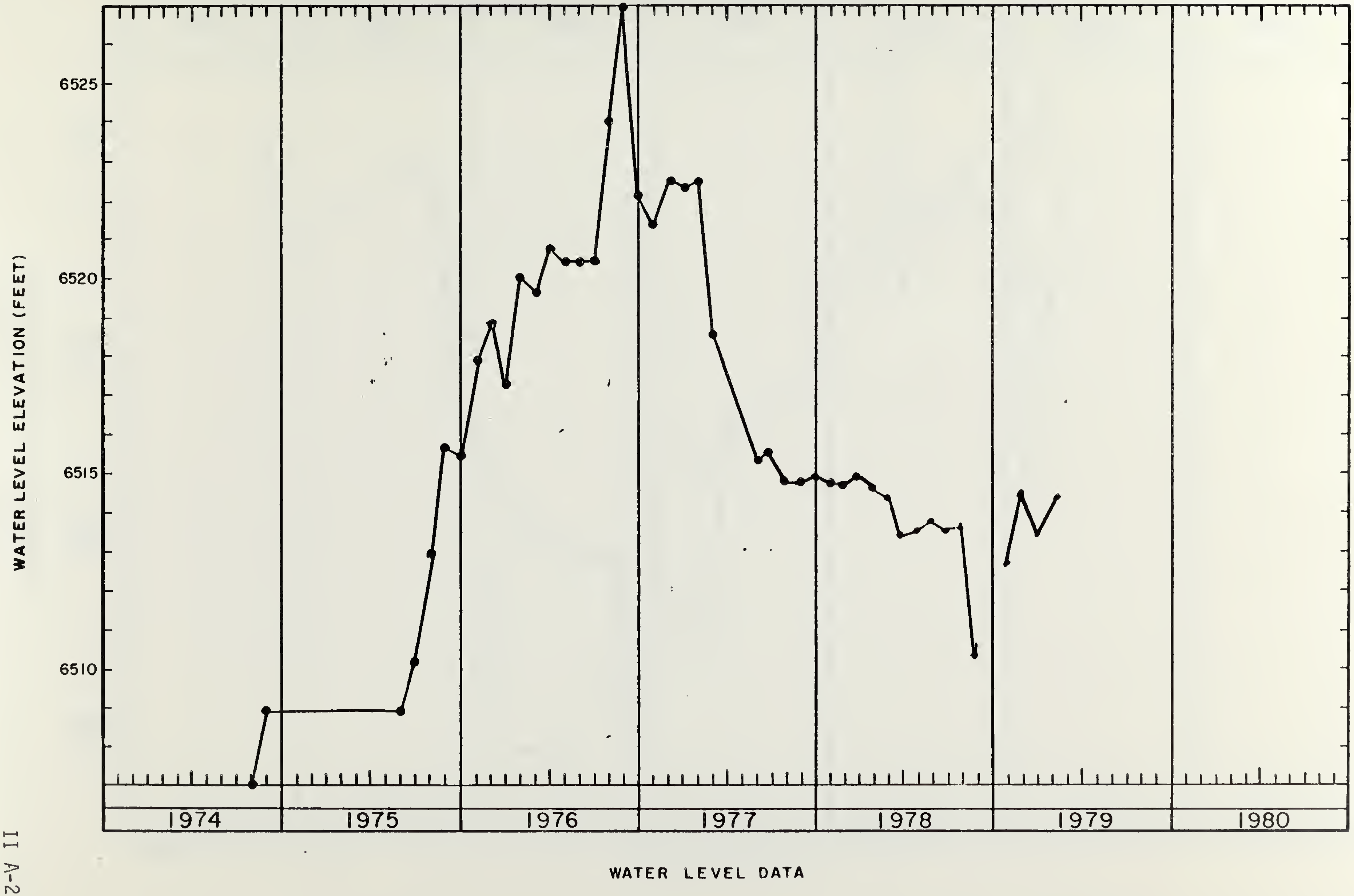
WELL NO. SG-17 - String 1R

GROUND ELEV. 6905 feet

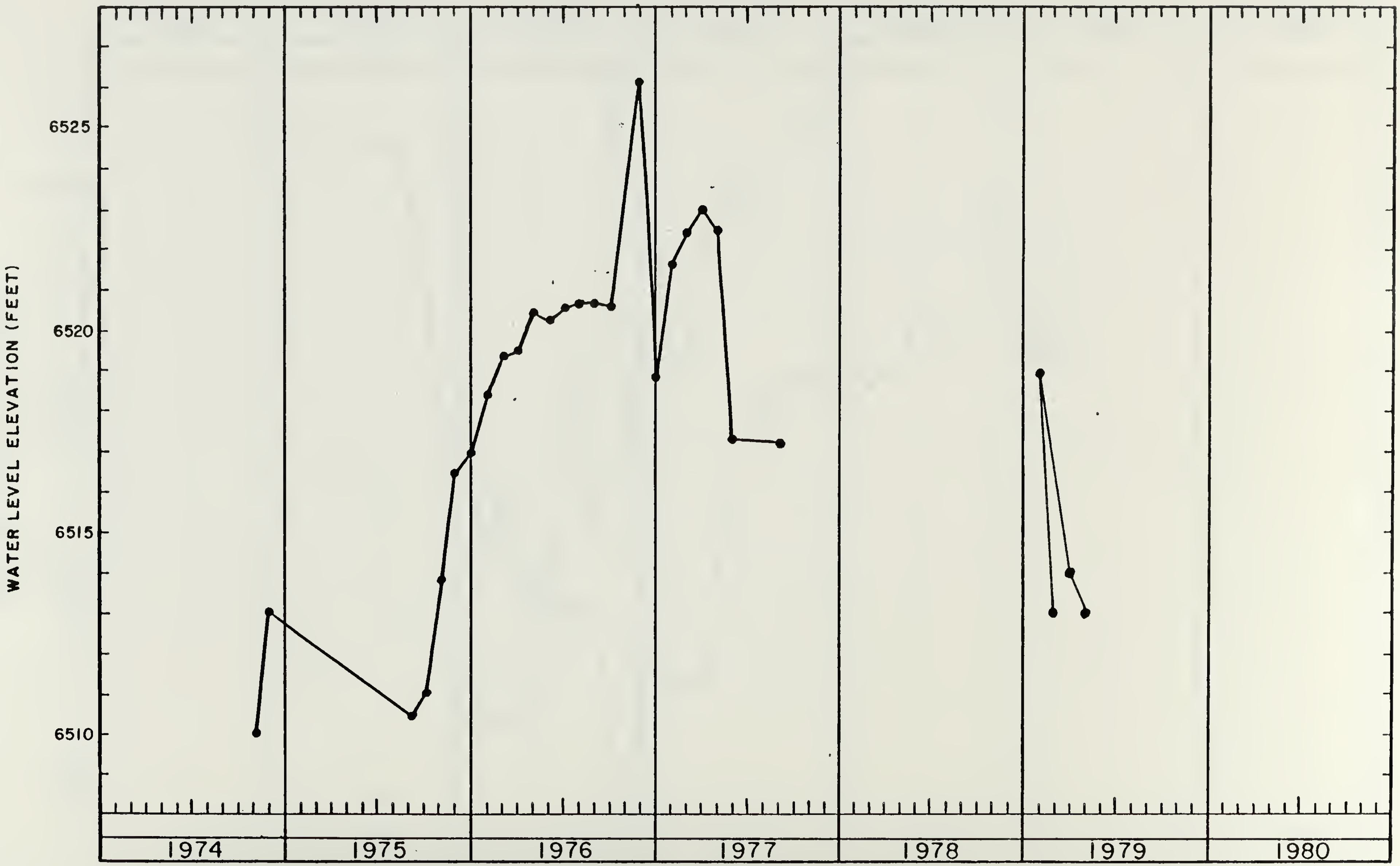


WATER LEVEL DATA

WELL NO. AT-1C #1 GROUND ELEV. 6905 feet

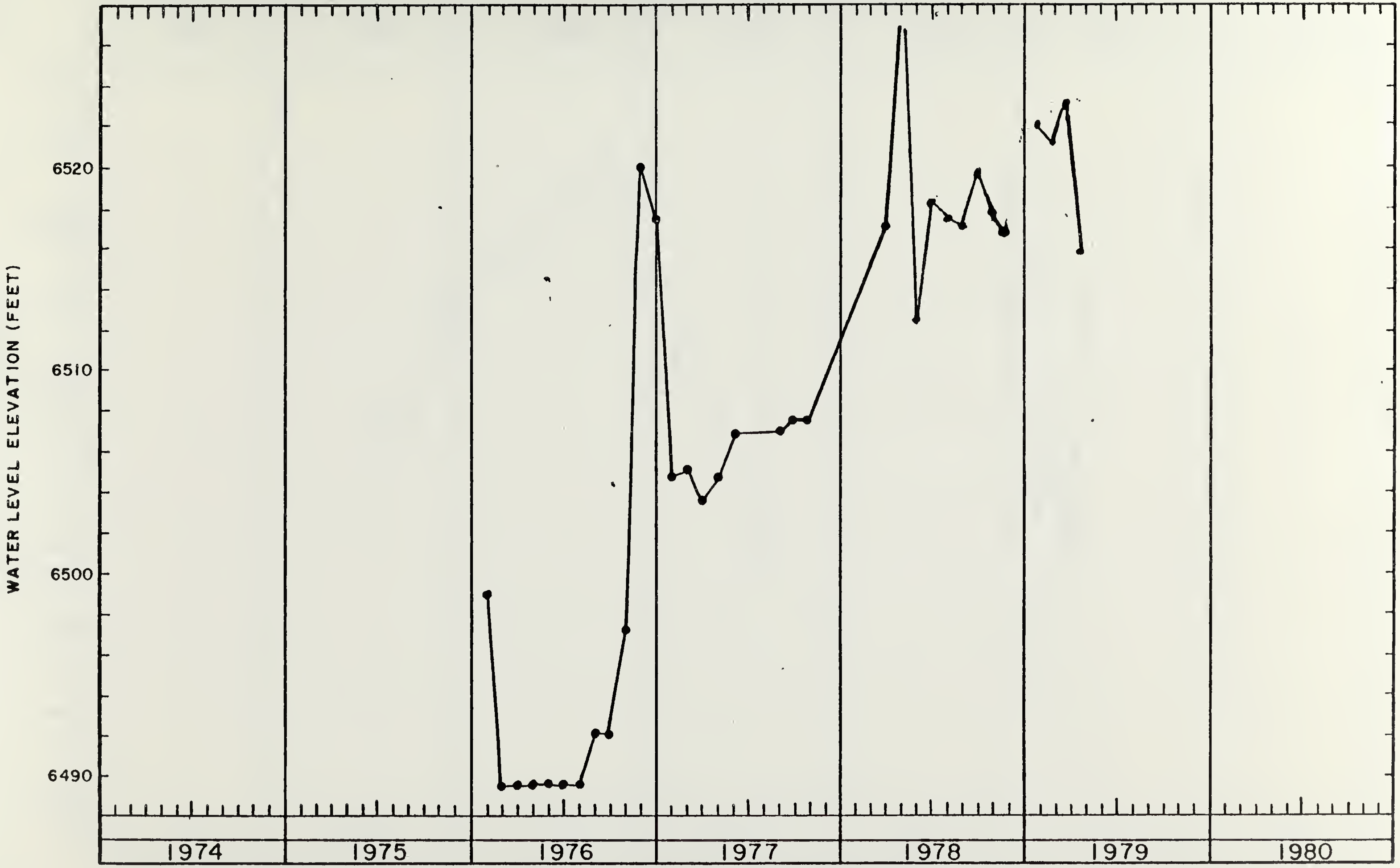


WELL NO. AT-1C #2 GROUND ELEV. 6905 feet



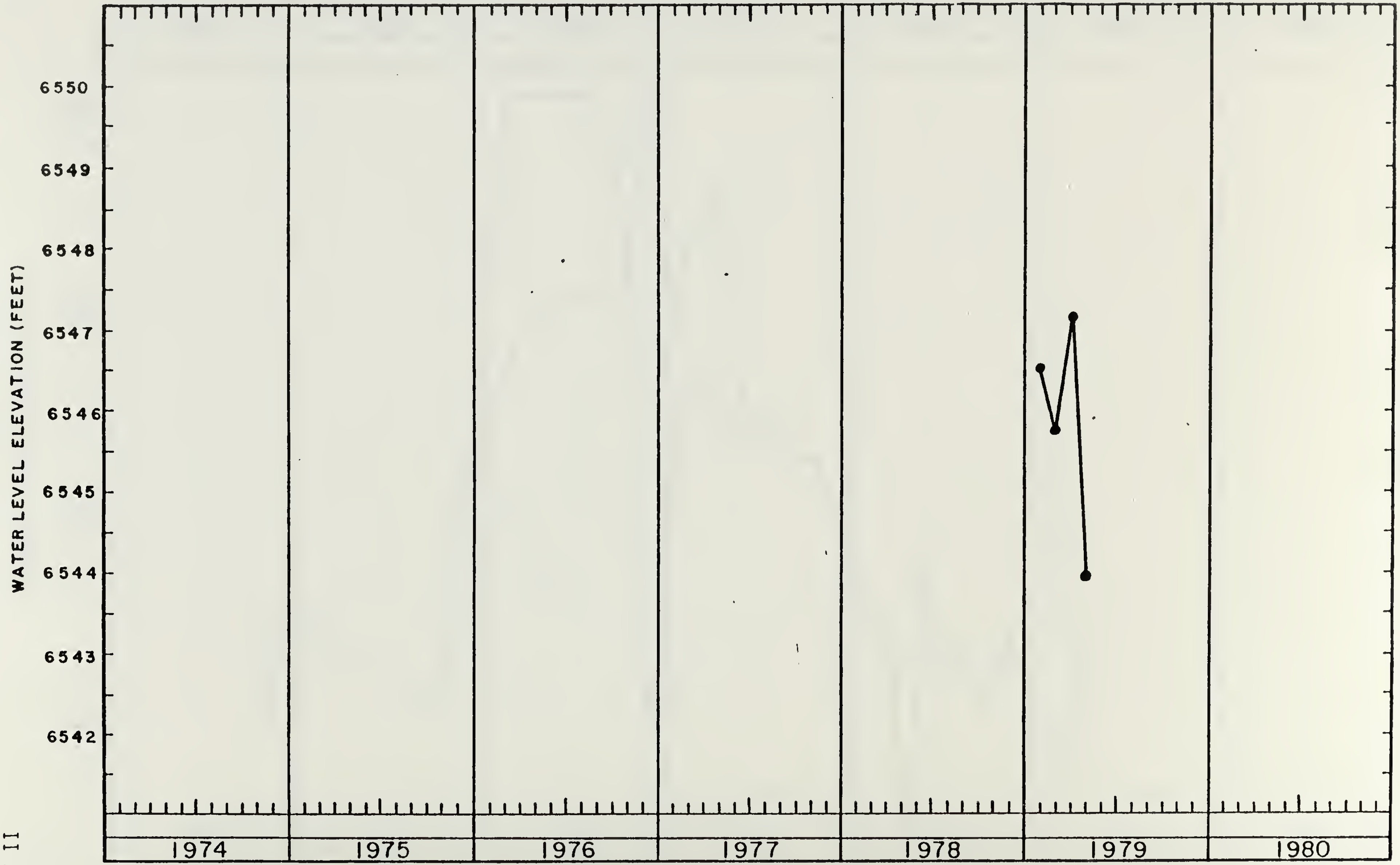
WATER LEVEL DATA

WELL NO. SG-11 #1R GROUND ELEV. 6900 feet

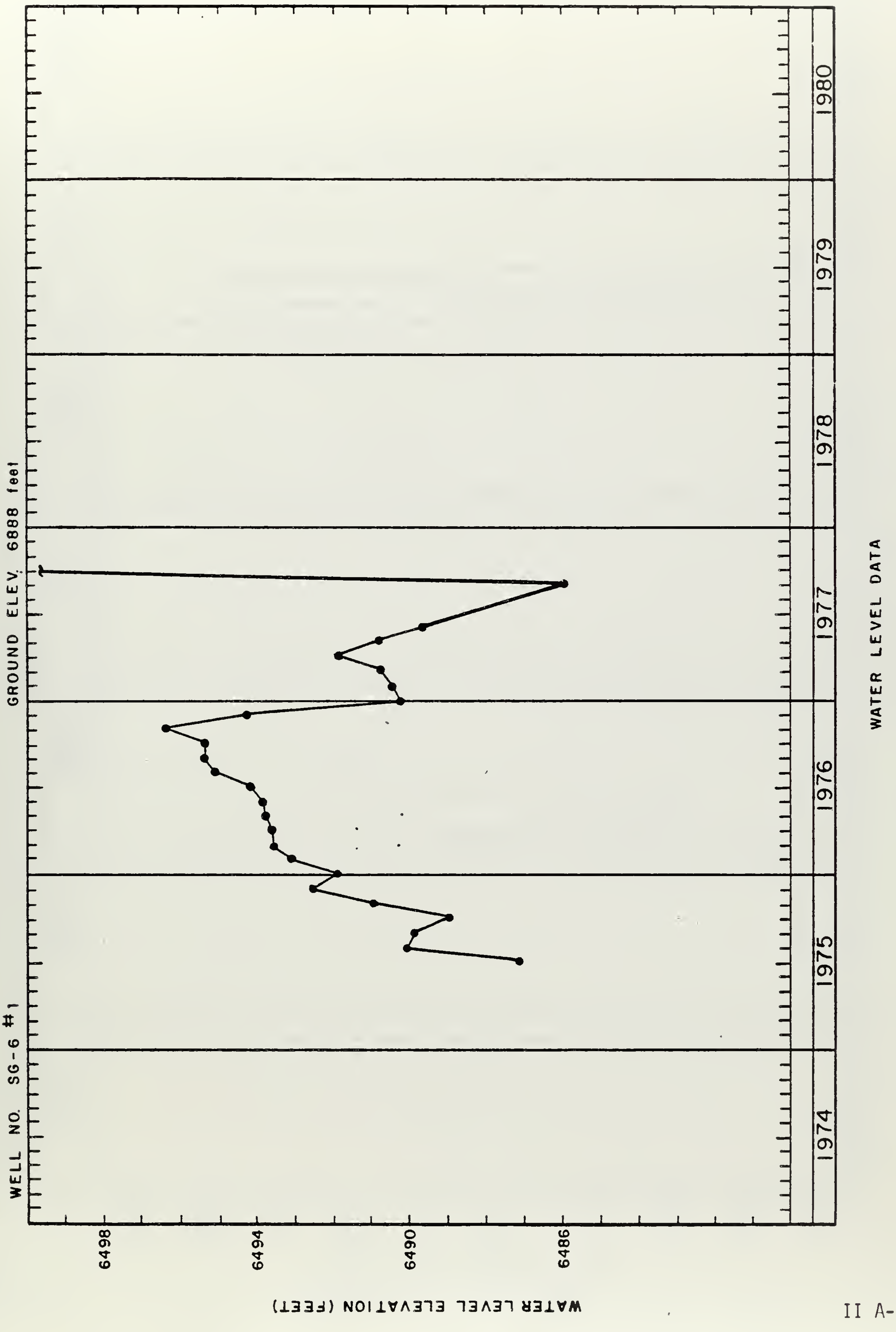


WATER LEVEL DATA

WELL NO. SG-II-2 GROUND ELEV. 6900 feet

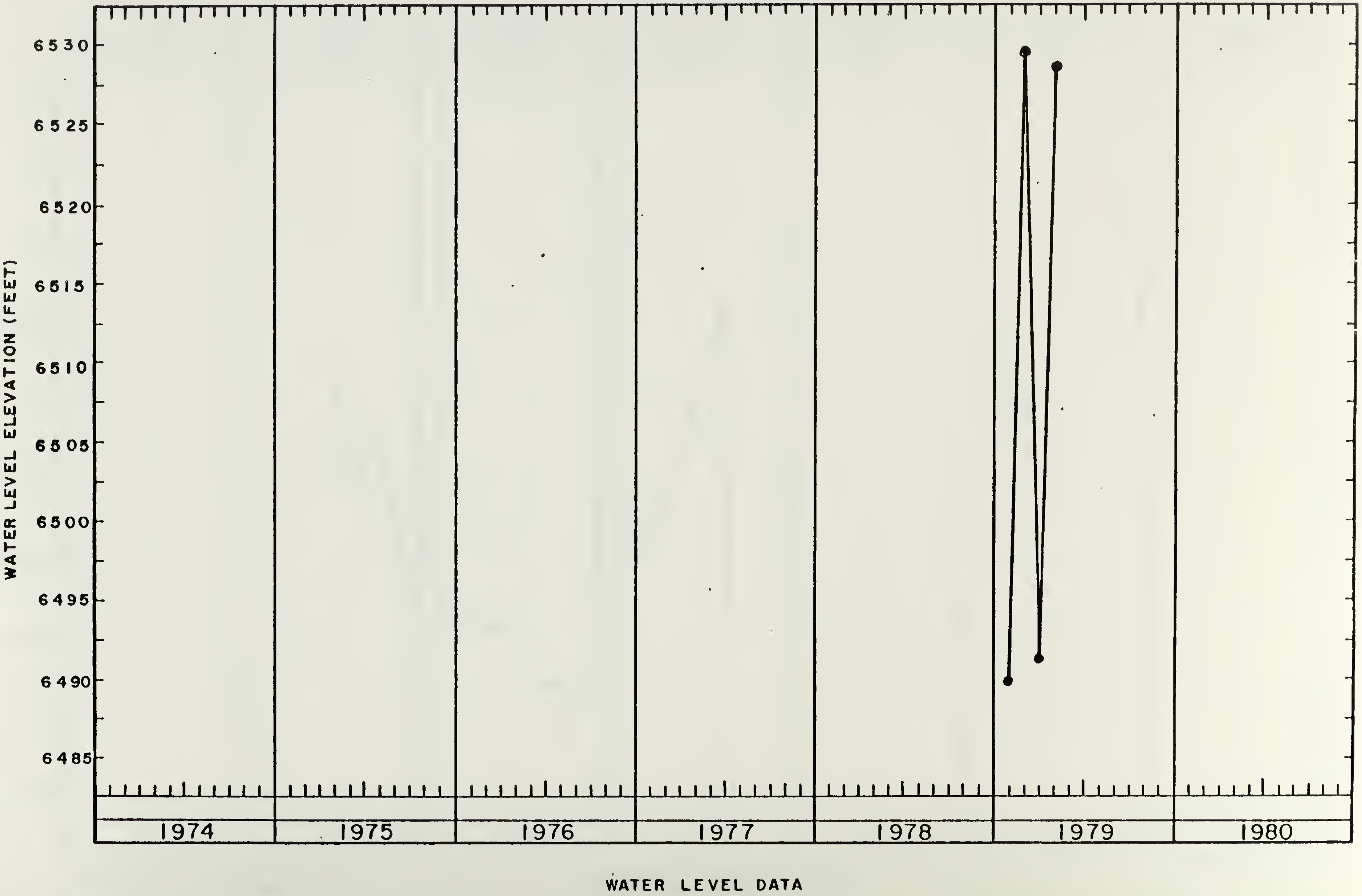


WATER LEVEL DATA


WELL NO. SG-6 #1
GROUND ELEV. 6888 feet
WATER LEVEL DATA
WATER LEVEL ELEVATION (FEET)
6498
6494
6490
6486
1974
1975
1976
1977
1978
1979
1980

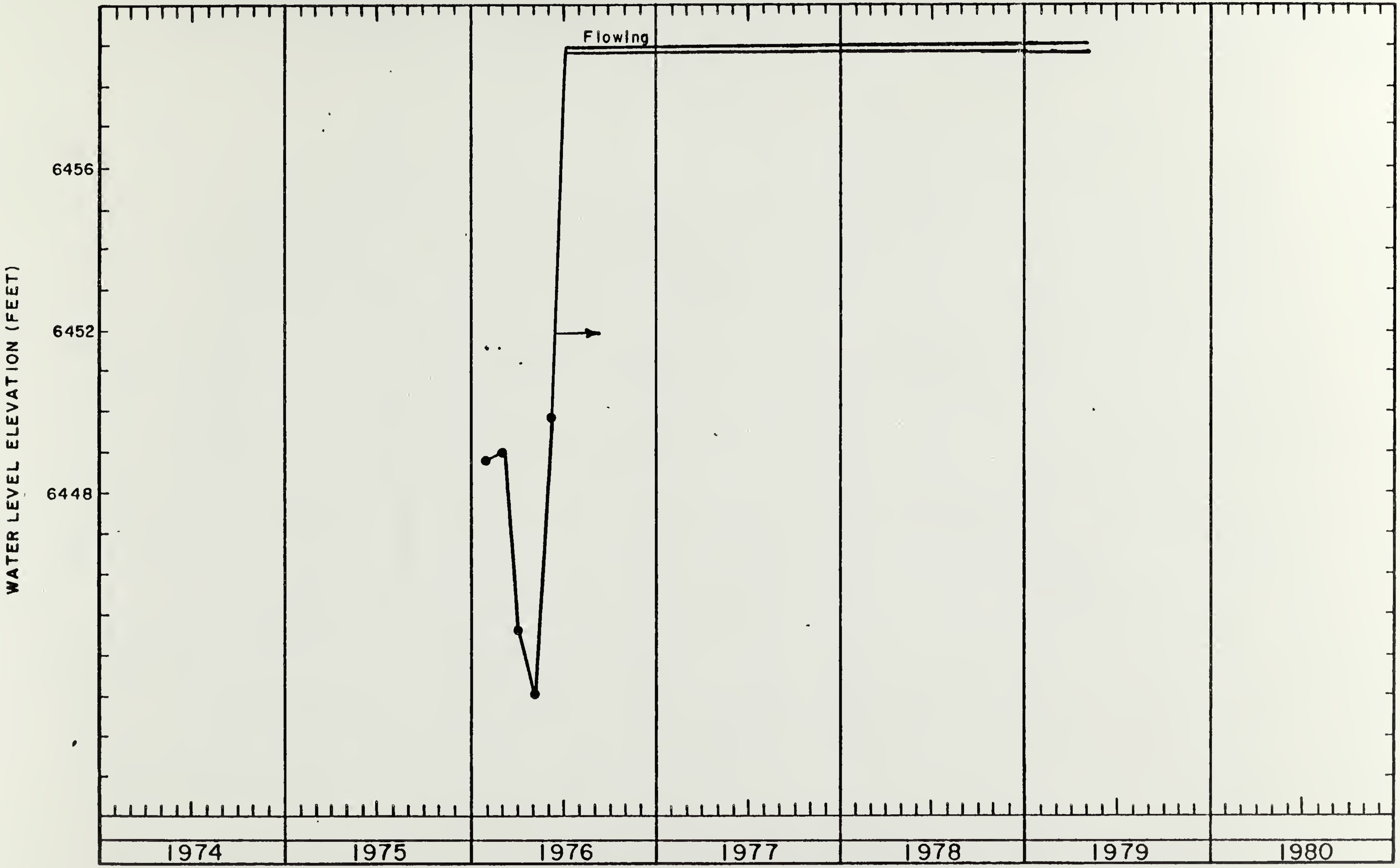
WELL NO. SG-6-2

GROUND ELEV. 6888 feet



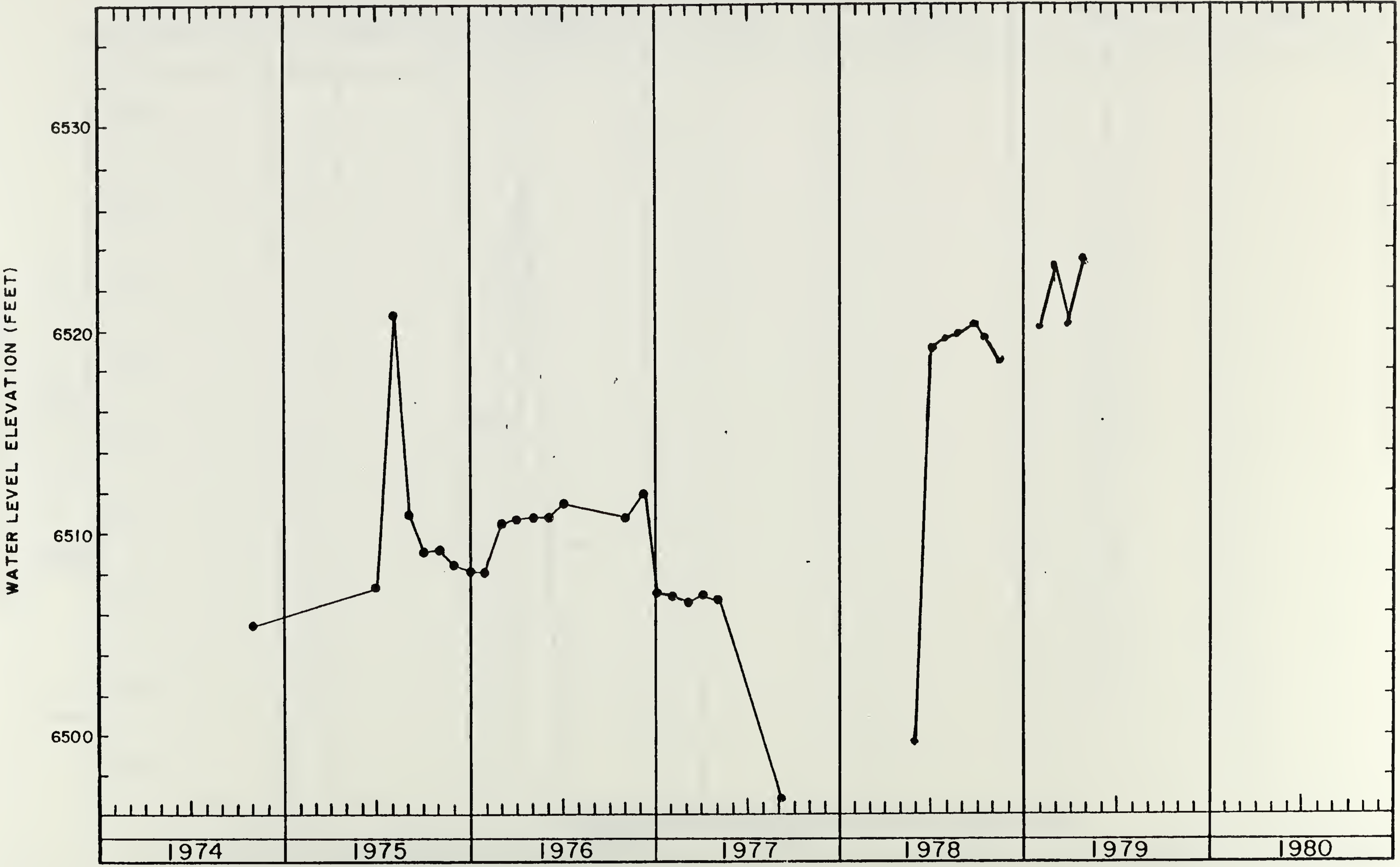
WELL NO. SG-8R

GROUND ELEV. 6538 feet



WATER LEVEL DATA

WELL NO. SG-9 #1 GROUND ELEV. 6870 feet



WATER LEVEL DATA

GROUND WATER
QUALITY

WATER QUALITY DATA FOR GROUND WATER

A - Alluvial Wells

B - Upper Aquifer Wells

C - Lower Aquifer Wells

Water quality data collected during the period of this report are reported in Tables II A-11 through II A-13. Refer to Figures II A-5 and II A-6 for maps of the Alluvial Well and Deep Well monitoring networks, respectively.

Table/Figure No.	Description	Page No.
Table II A-11	Water Quality Parameters - Alluvial Wells (4 Pages)	II A-278
Table II A-12	Water Quality Parameters - Upper Aquifer (4 Pages)	II A-282
Table II A-13	Water Quality Parameters - Lower Aquifer (4 Pages)	II A-286

An attempt has been made to refer to all wells in terms of their four-digit computer station codes. For additional information on these codes, refer to Section IV.

Table II A-11

CB-TRACT
WATER QUALITY PARAMETERS
ALLUVIAL WELLS
FOR SAMPLE DATA SHOWN

WELL	YR	MO	SPEC COND (UMHOS)	PH	TOT ALK (MG/L CACO3)	HARDNESS (MG/L CACO3)	SOLUBLE SOLIDS (MG/L)	CHEM O2 DEMAND (MG/L)	BOD5 (MG/L)	OIL AND GREASE (MG/L)	DISS O2 (MG/L)	WATER TEMP (C)	TOC (MG/L)	LAS (MG/L)	N KJELD. (MG/L)
WA01	78	3	-.1	7.5	500.0	460.0	1230.0	18.0	6.0	7.0	4.0	14.0	-.1	-.10	.2
		9	1600.0	7.7	550.0	520.0	1300.0	10.0	4.0	8.0	3.4	16.0	24.0	-.10	1.5
	79	3	-.1	-.1	360.0	490.0	1200.0	10.0	7.0	20.0	-.1	-.1	83.0	.04	4.0
WA03	78	1	1300.0	7.5	674.0	600.0	920.0	24.0	5.0	1.0	6.4	10.0	-.1	-.10	.2
	79	3	-.1	-.1	510.0	580.0	920.0	20.0	7.0	20.0	-.1	-.1	59.0	.04	4.0
WA05	78	1	1250.0	7.8	703.0	490.0	867.0	16.0	6.0	4.0	6.8	21.0	-.1	-.10	.5
WA06	78	1	1400.0	7.8	750.0	500.0	980.0	4.0	4.0	17.0	6.8	21.0	-.1	-.10	.2
	79	3	-.1	-.1	580.0	460.0	1000.0	8.0	7.0	9.0	-.1	-.1	69.0	.04	4.0
WA07	78	1	1150.0	7.9	560.0	480.0	794.0	16.0	4.0	31.0	6.0	21.0	-.1	-.10	.1
WA08	78	1	1200.0	7.8	560.0	570.0	940.0	8.0	4.0	10.0	6.5	21.0	-.1	-.10	.4
		3	-.1	8.3	480.0	530.0	970.0	20.0	4.0	10.0	5.9	16.0	-.1	-.10	.2
		9	1200.0	7.6	430.0	530.0	1000.0	8.0	5.0	9.0	6.7	11.0	-1.0	-1.00	-1.0
WA09	78	1	1300.0	7.8	465.0	460.0	771.0	4.0	2.0	14.0	6.8	21.0	-.1	-.10	.1
		3	-.1	7.9	430.0	440.0	990.0	20.0	6.0	35.0	8.8	8.0	-.1	-.10	.1
		9	1000.0	7.6	380.0	480.0	840.0	50.0	5.0	13.0	11.2	15.0	-.1	-.10	.2
	79	3	-.1	-.1	360.0	600.0	1000.0	20.0	50.0	10.0	-.1	-.1	-.1	-.10	-.1
WA10	78	1	1400.0	7.7	541.0	590.0	933.0	24.0	3.8	32.0	6.7	21.0	-.1	-.10	.4
		3	-.1	7.6	510.0	500.0	970.0	28.0	5.0	33.0	8.3	16.0	-.1	-.10	.0
		9	1300.0	7.5	450.0	460.0	1000.0	8.0	1.0	5.0	9.0	10.0	21.0	-.10	.9
WA11	78	1	1300.0	7.9	532.0	630.0	1060.0	4.0	3.0	15.0	6.5	21.0	-.1	-.10	.1
		3	-.1	7.5	490.0	630.0	1200.0	4.0	4.0	1.0	7.9	15.0	-.1	-.10	.3
		9	1320.0	7.8	420.0	530.0	1100.0	9.0	30.0	7.0	8.5	7.8	13.0	-.10	.5
	79	3	-.1	-.1	420.0	480.0	820.0	8.0	.9	3.0	-.1	-.1	-.1	-.10	-.1
WA12	78	1	1250.0	7.9	617.0	650.0	1090.0	16.0	3.0	9.0	6.6	21.0	-.1	-.10	.1
		3	-.1	7.4	460.0	580.0	1400.0	16.0	6.0	6.0	6.2	15.0	-.1	-.10	.1
		9	1400.0	7.7	510.0	580.0	1200.0	2.0	4.0	16.0	7.3	16.0	15.0	-.10	.6
	79	3	-.1	-.1	470.0	640.0	1200.0	10.0	1.0	4.0	-.1	-.1	-.1	-.10	-.1

NOTE: -.1 INDICATES NOT SAMPLED

Table II A-11

CB-TRACT
WATER QUALITY PARAMETERS
ALLUVIAL WELLS
FOR SAMPLE DATE SHOWN

WELL	YR	MO	MG (MG/L)	NO3 (MG/L)	K (MG/L)	NA (MG/L)	SO4 (MG/L)	HCO3 (MG/L CACO3)	CA (MG/L)	CO3 (MG/L CACO3)	CL (MG/L)	LI (MG/L)	AL (MG/L)	AS (MG/L)	BA (MG/L)
WA01	78	3	86.0	.60	2.0	220.0	140.0	500.0	82.0	.9	18.0	.02	3.000	.010	.40
		9	82.0	.44	1.6	250.0	420.0	550.0	66.0	.9	16.0	.01	.050	.010	.40
	79	3	80.0	.40	2.0	250.0	420.0	360.0	70.0	.9	30.0	.01	.090	.010	.40
WA03	78	1	92.0	3.40	1.6	135.0	383.0	674.0	44.0	1.0	11.0	.02	.300	.020	.50
	79	3	80.0	2.00	1.0	130.0	350.0	510.0	110.0	.9	23.0	.01	.090	.010	.40
WA05	78	1	69.0	4.90	1.9	161.0	251.0	703.0	75.0	1.0	14.0	.04	.100	.020	1.00
WA06	78	1	72.0	1.90	1.8	184.0	268.0	741.0	41.0	9.0	17.0	.03	.100	.020	.50
	79	3	70.0	1.00	2.0	180.0	300.0	580.0	70.0	.9	26.0	.01	.090	.010	.40
WA07	78	1	51.0	6.20	1.8	136.0	313.0	560.0	30.0	1.0	16.0	.02	.100	.020	.50
WA08	78	1	73.0	13.30	1.9	137.0	416.0	551.0	54.0	9.0	11.0	.02	.100	.020	.50
		3	78.0	6.00	2.0	88.0	440.0	475.0	95.0	8.0	6.0	.01	.200	.010	.40
		9	80.0	3.10	1.8	130.0	410.0	430.0	83.0	.9	7.0	.01	.050	.010	.40
WA09	78	1	6.8	8.10	1.5	114.0	417.0	465.0	45.0	1.0	8.0	.03	.600	.020	1.50
		3	72.0	6.00	.9	99.0	410.0	430.0	84.0	.9	6.0	.02	.100	.010	.40
		9	66.0	4.90	.8	100.0	140.0	380.0	77.0	.9	6.0	.01	.700	.010	.50
	79	3	90.0	2.00	3.0	150.0	450.0	360.0	90.0	.9	18.0	.01	.090	.010	.40
WA10	78	1	72.0	5.90	1.8	142.0	407.0	541.0	45.0	1.0	8.5	.02	.100	.020	1.00
		3	79.0	4.00	2.0	120.0	350.0	510.0	110.0	.9	6.0	.01	.100	.010	.40
		9	75.0	5.80	1.4	130.0	340.0	420.0	91.0	30.0	5.5	.01	.050	.010	.40
WA11	78	1	98.0	4.00	1.8	154.0	539.0	532.0	45.0	1.0	10.0	.04	1.100	.020	.50
		3	96.0	4.00	2.0	130.0	320.0	490.0	88.0	.9	9.0	.02	.040	.010	.40
		9	94.0	1.80	1.8	150.0	430.0	420.0	80.0	.9	8.0	.01	.090	.010	.40
	79	3	64.0	4.00	.9	110.0	280.0	420.0	76.0	.9	26.0	.01	.400	.010	.40
WA12	78	1	97.0	4.20	1.8	159.0	518.0	617.0	53.0	1.0	10.0	.04	.010	.020	2.00
		3	97.0	3.00	2.0	130.0	440.0	460.0	110.0	.9	9.0	.02	.200	.010	.40
		9	94.0	1.80	1.7	140.0	420.0	510.0	95.0	.9	8.0	.01	.200	.010	.70
	79	3	90.0	3.00	2.0	150.0	440.0	470.0	100.0	.9	16.0	.01	.090	.010	.40

NOTE: -.1 INDICATES NOT SAMPLED

Table II A-11

CB-TRACT
WATER QUALITY PARAMETERS
ALLUVIAL WELLS
FOR SAMPLE DATE SHOWN

WELL	YR	MO	B (MG/L)	CD (MG/L)	CR (MG/L)	CU (MG/L)	F (MG/L)	FE (MG/L)	PB (MG/L)	MN (MG/L)	NI (MG/L)	ZN (MG/L)	SR (MG/L)	AG (MG/L)	MO (MG/L)
WA01	78	3	.04	.040	.070	.010	.96	.02	.300	.400	.010	.210	4.0	.060	.100
		9	.56	.010	.010	.010	.60	.40	.040	.300	.010	.040	5.0	-.100	.040
	79	3	.20	.010	.010	.010	.90	.40	.010	.300	.010	.060	5.0	.010	.020
WA03	78	1	.04	.020	.040	.020	.42	.06	.090	.020	.020	.020	5.4	.060	.020
	79	3	.10	.010	.010	.010	.48	.40	.010	.010	.010	.010	6.0	.010	.010
WA05	78	1	.08	.020	.020	.020	.40	.08	.050	.040	.020	.020	3.0	.080	.020
WA06	78	1	.10	.020	.020	.020	.48	.03	.100	.060	.020	.020	3.3	.100	.020
	79	3	.10	.010	.010	.010	.53	.40	.010	.100	.010	.010	5.0	.010	.020
WA07	78	1	.04	.020	.020	.020	.20	.04	.100	.050	.020	.020	3.3	.100	.020
WA08	78	1	.08	.020	.040	.020	.30	.02	.050	.050	.020	.020	2.5	.100	.020
		3	.03	.020	.010	.010	.20	.20	.100	.100	.010	.030	4.0	.020	.010
		9	.03	.010	.010	.010	.10	.40	.040	.010	.010	.040	5.0	-1.000	.080
WA09	78	1	.04	.020	.020	.020	.20	.05	.030	.020	.020	.020	2.6	.100	.020
		3	.03	.020	.020	.020	.20	.01	.100	.070	.010	.030	4.0	.080	.010
		9	1.10	.010	.010	.060	.20	.40	.040	.080	.010	.300	5.0	-.100	.010
	79	3	.03	.010	.010	.010	.21	.40	.010	.010	.010	.100	6.0	.010	.010
WA10	78	1	.04	.040	.020	.020	.30	.03	.100	.020	.020	.020	2.5	.100	.020
		3	.04	.010	.020	.010	.30	.08	.100	.070	.010	.060	4.0	.060	.020
		9	.09	.010	.010	.010	.30	.40	.040	.010	.010	.020	5.0	-.100	.010
WA11	78	1	.04	.020	.040	.020	.20	.09	.200	.030	.020	.100	2.8	.060	.020
		3	.04	.010	.010	.010	.20	.01	.100	.070	.010	.030	5.0	.040	.010
		9	.56	.010	.010	.010	.20	.40	.040	.010	.010	.020	6.0	-.100	.040
	79	3	.03	.010	.010	.010	.21	.40	.010	.010	.010	.010	5.0	.010	.010
WA12	78	1	.04	.020	.020	.020	.20	.01	.070	.020	.020	.020	3.0	.060	.020
		3	.09	.010	.010	.010	.20	.05	.100	.090	.010	.040	5.0	.080	.020
		9	.04	.010	.010	.020	.20	.40	.040	.010	.010	.020	6.0	-.100	.050
	79	3	.03	.010	.010	.010	.22	.40	.010	.010	.010	.010	6.0	.010	.020

NOTE: -.1 INDICATES NOT SAMPLED

Table II A-11

CB-TRACT
WATER QUALITY PARAMETERS
ALLUVIAL WELLS
FOR SAMPLE DATE SHOWN

WELL	YR	MO	PHEN (MG/L)	NH3 (MG/L)	AG (MG/L)	SE (MG/)	HG (MG/L)	BR (MG/L)	FECAL COLIF. COLONY /100ML	TOTAL COLIF. COLONY /100ML	TOTAL ALPHA PCI/L	TOTAL BETA PCI/L	RADIUM 226 PCI/L	S2O3 (MG/L)	DOC (MG/L)
WA01	78	3	.0020	.170	.060	-.100	-.10000	.090	-.1	-.1	-.1	-.1	-.1	-.1	-.1
		9	.0110	6.600	-.100	.020	.01000	.780	.9	-.1	27.0	82.0	1.2	42.0	23.0
	79	3	.0009	.020	.010	.010	.01000	.700	.9	.9	20.0	38.0	1.1	.9	-.1
WA03	78	1	-.1000	-.100	.060	.000	.00000	.000	-.1	-.1	.0	.0	.0	-.1	-.1
	79	3	.0010	.220	.010	.010	.01000	.600	.9	.9	9.0	.0	.0	.9	-.1
WA05	78	1	-.1000	-.100	.080	.000	.00000	.000	-.1	-.1	.0	.0	.0	-.1	-.1
WA06	78	1	-.1000	-.100	.100	.000	.00000	.000	-.1	-.1	.0	.0	.0	-.1	-.1
	79	3	.0070	.050	.010	.010	.01000	.500	.9	.9	21.0	4.0	.0	.9	-.1
WA07	78	1	-.1000	-.100	.100	.000	.00000	.000	-.1	-.1	.0	.0	.0	-.1	-.1
WA08	78	1	-.1000	-.100	.100	.000	.00000	.000	-.1	-.1	.0	.0	.0	-.1	-.1
		3	-.1000	.080	.020	-.100	-.10000	.600	-.1	-.1	-.1	-.1	-.1	-.1	-.1
		9	.0030	3.800	-1.000	.010	.01000	.700	-1.0	-1.0	.0	24.0	-1.0	-1.0	-1.0
WA09	78	1	-.1000	-.100	.100	.000	.00000	.000	-.1	-.1	.0	.0	.0	-.1	-.1
		3	-.1000	.030	.080	-.100	-.10000	.500	-.1	-.1	-.1	-.1	-.1	-.1	-.1
		9	.0020	.250	-.100	.010	.01000	.600	-.1	-.1	190.0	18.0	2.5	-.1	-.1
	79	3	.0040	.220	.010	-.100	-.10000	.090	-.1	-.1	-.1	-.1	-.1	-.1	-.1
WA10	78	1	-.1000	-.100	.100	.000	.00000	.000	-.1	-.1	.0	.0	.0	-.1	-.1
		3	-.1000	.030	.060	-.100	-.10000	.500	-.1	-.1	-.1	-.1	-.1	-.1	-.1
		9	.0230	1.000	-.100	.030	.01000	.880	.9	-.1	.0	12.0	-.1	29.0	19.0
WA11	78	1	-.1000	-.100	.060	.000	.00000	.000	-.1	-.1	.0	.0	.0	-.1	-.1
		3	-.1000	.220	.040	-.100	-.10000	.600	-.1	-.1	-.1	-.1	-.1	-.1	-.1
		9	.0010	4.400	-.100	.010	.01000	.820	.9	-.1	.0	23.0	-.1	33.0	13.0
	79	3	.0010	.050	.010	-.100	-.10000	.800	-.1	-.1	-.1	-.1	-.1	-.1	-.1
WA12	78	1	-.1000	-.100	.060	.000	.00000	.000	-.1	-.1	.0	.0	.0	-.1	-.1
		3	-.1000	.030	.080	-.100	-.10000	.600	-.1	-.1	-.1	-.1	-.1	-.1	-.1
		9	.0010	.001	-.100	.010	.01000	.590	1.0	-.1	13.0	5.6	-.1	36.0	12.0
	79	3	.0009	.040	.010	-.100	-.10000	1.000	-.1	-.1	-.1	-.1	-.1	-.1	-.1

NOTE: -.1 INDICATES NOT SAMPLED

Table II A-12

CB-TRACT
WATER QUALITY PARAMETERS
UPPER AQUIFER
FOR SAMPLE DATA SHOWN

WELL	YR	MO	SPEC COND (UMHOS)	PH	TOT ALK (MG/L CACO3)	HARDNESS (MG/L CACO3)	SOLUBLE SOLIDS (MG/L)	CHEM O2 DEMAND (MG/L)	BOD5 (MG/L)	OIL AND GREASE (MG/L)	DISS O2 (MG/L)	WATER TEMP (C)	TOC (MG/L)	LAS (MG/L)	N KJELD. (MG/L)
WX02	78	5	1800.0	8.8	500.0	44.0	990.0	28.0	8.0	10.0	12.0	4.6	-.1	-.10	.8
		11	1500.0	8.6	450.0	42.0	1200.0	2.0	1.0	6.0	4.0	12.0	57.0	-.10	3.3
WX04	78	5	900.0	8.0	280.0	130.0	530.0	38.0	4.0	8.0	3.1	17.0	-.1	-.10	2.4
WX10	78	6	1500.0	7.1	420.0	400.0	990.0	24.0	5.0	13.0	2.4	17.0	1.0	-.10	-.1
		11	1500.0	7.6	410.0	430.0	1000.0	4.0	4.0	30.0	3.0	14.0	23.0	.04	3.0
WX12	78	5	1200.0	7.9	490.0	300.0	860.0	42.0	8.0	7.0	8.0	18.0	-.1	-.10	2.9
		11	1200.0	7.6	480.0	330.0	870.0	2.0	20.0	20.0	2.0	10.0	18.0	.04	3.0
WX17	78	5	1700.0	8.5	340.0	50.0	1000.0	47.0	15.0	8.0	2.5	16.0	-.1	-.10	1.2
		11	1450.0	8.2	1500.0	200.0	880.0	6.0	2.0	3.0	1.0	16.0	35.0	.04	3.0
WX19	78	6	2700.0	7.9	900.0	40.0	1800.0	36.0	3.0	.1	.5	18.0	4.0	-.10	-.1
		11	2900.0	8.7	1500.0	50.0	1700.0	30.0	5.0	70.0	2.0	8.0	21.0	.04	3.0
WX20	78	5	2600.0	8.1	1650.0	62.0	1900.0	4.0	8.0	3.0	.8	18.0	1.0	-.10	-.1
		11	1800.0	8.0	1500.0	40.0	1700.0	10.0	10.0	11.0	2.0	14.0	73.0	.04	4.0
WX21	78	6	825.0	8.8	420.0	150.0	630.0	28.0	10.0	20.0	2.5	14.0	1.0	-.10	-.1
WX44	78	5	1400.0	7.8	410.0	410.0	750.0	24.0	10.0	4.0	3.6	19.0	-.1	-.10	.5
WX55	78	5	1180.0	8.6	600.0	44.0	670.0	4.0	5.0	18.0	3.8	12.0	-.1	-.10	1.2
		11	1100.0	8.1	550.0	38.0	760.0	10.0	2.0	10.0	3.0	5.5	54.0	-.10	3.3
WX63	78	5	1200.0	8.6	670.0	42.0	930.0	8.0	7.0	8.0	3.7	16.5	-.1	-.10	1.4
		11	1300.0	7.8	610.0	350.0	870.0	8.0	40.0	10.0	2.0	12.0	80.0	-.10	3.3
WX92	78	5	2000.0	8.3	850.0	28.0	970.0	60.0	26.0	8.0	3.6	22.0	-.1	-.10	3.5
		11	1500.0	8.7	780.0	20.0	1100.0	2.0	1.0	6.0	2.0	12.0	65.0	-.10	3.3

NOTE: -.1 INDICATES NOT SAMPLED

Well WX18 was not able to be swabbed during this time period.

Table II A-12

CB-TRACT
WATER QUALITY PARAMETERS
UPPER AQUIFER
FOR SAMPLE DATE SHOWN

WELL	YR	MO	MG (MG/L)	NO3 (MG/L)	K (MG/L)	NA (MG/L)	SO4 (MG/L)	HCO3 (MG/L CACO3)	CA (MG/L)	CO3 (MG/L CACO3)	CL (MG/L)	LI (MG/L)	AL (MG/L)	AS (MG/L)	BA (MG/L)
WX02	78	5	5.0	5.00	1.2	390.0	240.0	460.0	18.0	40.0	16.0	.08	.400	.010	.50
		11	6.0	.09	1.3	370.0	310.0	390.0	10.0	60.0	15.0	.08	.200	.010	.40
WX04	73	5	2.0	2.00	.9	180.0	130.0	260.0	6.0	20.0	8.0	.04	.200	.010	.40
WY10	78	6	36.0	3.00	.9	1500.0	360.0	400.0	54.0	20.0	8.0	.07	.100	.010	.40
		11	62.0	.09	1.0	220.0	360.0	410.0	73.0	.9	2.6	.04	.300	.010	.40
WX12	78	5	10.0	5.00	.1	360.0	190.0	490.0	34.0	.9	6.0	.07	.100	.100	.40
		11	60.0	.09	2.0	230.0	220.0	430.0	34.0	50.0	10.0	.05	.200	.010	.40
WX17	78	5	5.0	4.00	.2	2200.0	110.0	760.0	6.0	80.0	14.0	.07	.300	.010	.40
		11	4.0	.09	3.0	440.0	16.0	1370.0	7.0	130.0	11.0	.04	.200	.010	.40
WX19	78	6	2.0	4.00	1.0	2300.0	82.0	820.0	4.0	80.0	14.0	.10	.100	.010	1.00
		11	4.0	.09	2.0	840.0	4.0	1300.0	10.0	200.0	18.0	.09	.010	.010	2.00
WX20	78	5	2.0	6.00	.1	2000.0	8.0	1420.0	7.0	230.0	16.0	.10	.100	.100	1.00
		11	4.0	8.00	1.0	840.0	4.0	1420.0	9.0	80.0	15.0	.08	.100	.010	3.00
WX21	78	6	15.0	4.00	.5	2000.0	28.0	340.0	16.0	80.0	4.0	.04	.200	.010	.40
WX44	78	5	14.0	11.00	1.0	200.0	170.0	370.0	57.0	40.0	12.0	.07	.700	.010	.50
WX55	78	5	6.0	5.00	1.8	320.0	8.2	580.0	16.0	20.0	7.0	.06	.300	.010	6.00
		11	6.0	.09	3.0	370.0	4.0	460.0	8.0	90.0	8.6	.05	.010	.010	.60
WY63	78	5	4.0	5.00	2.6	350.0	220.0	630.0	5.9	40.0	12.0	.07	.300	.010	5.00
		11	5.0	.09	3.0	200.0	13.0	540.0	10.0	60.0	15.0	.07	.010	.010	.40
WX92	78	5	41.0	5.00	.2	400.0	110.0	760.0	6.0	90.0	7.0	.10	.500	.010	.70
		11	3.0	.09	6.0	440.0	10.0	710.0	6.0	70.0	21.0	.20	.010	.040	.70

NOTE: -.1 INDICATES NOT SAMPLED

Well WS18 was not able to be swabbed during this time period.

Table II A-12

CB-TRACT
WATER QUALITY PARAMETERS
UPPER AQUIFER
FOR SAMPLE DATE SHOWN

WELL	YR	MO	PHEN (MG/L)	NH3 (MG/L)	AG (MG/L)	SE (MG/)	HG (MG/L)	BR (MG/L)	FECAL COLIF. COLONY /100ML	TOTAL COLIF. COLONY /100ML	TOTAL ALPHA PCI/L	TOTAL BETA PCI/L	RADIUM 226 PCI/L	S2O3 (MG/L)	DOC (MG/L)
WX02	78	5	.0020	.710	.010	-.100	-.10000	.090	-.1	-.1	-.1	-.1	-.1	-.1	-.1
		11	.0080	.160	-.100	.010	.01000	.090	.9	-.1	.0	.0	-.1	6.0	41.0
WX04	78	5	.0010	.030	.020	-.100	-.10000	.090	-.1	-.1	-.1	-.1	-.1	-.1	-.1
WX10	78	6	.0040	.300	-.100	-.100	.00100	.300	.9	-.1	.0	.0	-.1	-.1	1.0
		11	.0010	.730	.010	.010	.01000	.090	.9	.9	1.3	3.0	-.1	12.0	-.1
WX12	78	5	.0010	3.340	.010	-.100	-.10000	.300	-.1	-.1	-.1	-.1	-.1	-.1	-.1
		11	.0050	.540	-.100	.010	.01000	.090	.9	.9	.6	.0	-.1	11.0	-.1
WX17	78	5	.0010	2.360	.010	-.100	-.10000	.090	-.1	-.1	-.1	-.1	-.1	-.1	-.1
		11	.0060	1.400	.010	.010	.01000	.090	.9	.9	2.3	3.0	-.1	12.0	-.1
WX19	78	6	.0720	1.680	-.100	-.100	.01300	.090	.9	-.1	4.8	24.0	-.1	-.1	2.0
		11	.0010	2.100	.010	.010	.01000	.090	.9	.9	.9	.0	-.1	10.0	-.1
WX20	78	5	.0060	1.380	-.100	-.100	.00100	.090	.9	-.1	2.2	.0	-.1	-.1	1.0
		11	.0040	1.900	.010	.010	.01000	.090	.9	.9	2.9	7.0	-.1	17.0	-.1
WX21	78	6	.1330	.300	-.100	-.100	.00100	.400	42.0	-.1	.0	.0	-.1	-.1	1.0
WX44	78	5	.0010	-.100	.010	-.100	-.10000	.090	-.1	-.1	-.1	-.1	-.1	-.1	-.1
WX55	78	5	.0020	.960	.010	-.100	-.10000	.090	-.1	-.1	-.1	-.1	-.1	-.1	-.1
		11	.0120	1.600	-.100	.010	.01000	.090	.9	-.1	1.3	.0	-.1	5.0	52.0
WX63	78	5	.0030	.900	.010	-.100	-.10000	.090	-.1	-.1	-.1	-.1	-.1	-.1	-.1
		11	.0030	.470	-.100	.010	.01000	.090	.9	-.1	6.0	7.0	-.1	8.0	60.0
WX92	78	5	.0020	1.250	.040	-.100	-.10000	.090	-.1	-.1	-.1	-.1	-.1	-.1	-.1
		11	.0270	1.700	-.100	.010	.01000	.090	.9	-.1	.0	16.0	-.1	8.0	56.0

NOTE: -.1 INDICATES NOT SAMPLED

Well WX18 was not able to be swabbed during this time period.

Table II A-12

CB-TRACT
WATER QUALITY PARAMETERS
UPPER AQUIFER
FOR SAMPLE DATE SHOWN

WELL	YR	MO	B (MG/L)	CD (MG/L)	CR (MG/L)	CU (MG/L)	F (MG/L)	FE (MG/L)	PB (MG/L)	MN (MG/L)	NI (MG/L)	ZN (MG/L)	SR (MG/L)	AG (MG/L)	MO (MG/L)
WX02	78	5	.09	.010	.010	.010	1.70	.10	.090	.040	.090	.900	2.0	.010	.090
		11	.03	.010	.010	.010	.56	.40	.010	.070	.010	.010	3.0	-.100	.060
WX04	78	5	.04	.010	.090	.100	.95	4.00	.090	.100	.090	.900	7.0	.020	.090
WX10	78	6	.04	.010	.090	.100	.55	4.00	.090	.100	.090	.090	11.0	-.100	.090
		11	.20	.010	.010	.020	.33	14.00	.020	.080	.040	.080	10.0	.010	.080
WX12	78	5	.20	.010	.090	.100	3.20	4.00	.090	.100	.090	.900	10.0	.010	.090
		11	.03	.010	.010	.010	3.20	8.00	.010	.080	.010	.010	13.0	-.100	.010
WY17	78	5	1.00	.010	.090	.100	20.00	4.00	.200	.100	.090	.900	1.0	.010	.090
		11	1.00	.010	.010	.010	19.00	.40	.010	.010	.010	.010	1.0	.010	.020
WY19	78	6	1.00	.010	.090	.100	25.00	4.00	.090	.100	.090	.090	2.0	-.100	.200
		11	1.00	.010	.010	.010	24.00	.40	.010	.010	.010	.010	2.0	.010	.060
WX20	78	5	1.00	.010	.090	.100	24.00	4.00	.090	.100	.100	.090	2.0	-.100	.200
		11	4.00	.010	.010	.010	23.00	.40	.010	.010	.010	.010	3.0	.010	.060
WX21	78	6	.20	.010	.090	.100	9.40	4.00	.090	.100	.090	.090	5.0	-.100	.090
WX44	78	5	.09	.010	.010	.010	3.20	.10	.200	.060	.090	.900	9.0	.010	.090
WX55	78	5	.60	.010	.010	.100	18.00	4.00	.090	.030	.090	.900	3.0	.010	.090
		11	.60	.010	.010	.010	18.00	.40	.010	.010	.010	.010	3.0	-.100	.100
WX63	78	5	.40	.010	.010	.010	18.30	.20	.090	.010	.090	.900	2.0	.010	.200
		11	.80	.010	.010	.010	19.00	.40	.010	.100	.010	.010	3.0	-.100	.040
WY92	78	5	1.00	.010	.090	.100	21.00	9.00	.090	.100	.090	.900	2.0	.040	.200
		11	1.00	.010	.010	.010	21.00	.40	.010	.010	.010	.010	2.0	-.100	.060

NOTE: -.1 INDICATES NOT SAMPLED
Well WX18 was not able to be swabbed during this time period.

Table II A-13

CB-TPACT
WATER QUALITY PARAMETERS
LOWER AQUIFER
FOR SAMPLE DATA SHOWN

WELL	YR	MO	SPEC COND (UMHOS)	PH	TOT ALK (MG/L CACO3)	HARDNESS (MG/L CACO3)	SOLUBLE SOLIDS (MG/L)	CHEM O2 DEMAND (MG/L)	BOD5 (MG/L)	OIL AND GREASE (MG/L)	DISS O2 (MG/L)	WATER TEMP (C)	TOC (MG/L)	LAS (MG/L)	N KJELD. (MG/L)
WY01	78	5	7000.0	8.1	3100.0	26.0	3400.0	42.0	40.0	16.0	3.9	18.0	381.0	-.10	-.1
		11	4200.0	8.1	2800.0	24.0	3300.0	2.0	3.0	10.0	1.0	15.0	95.0	-.10	3.6
WY12	78	5	8000.0	7.6	490.0	62.0	6300.0	32.0	14.0	11.0	2.5	16.0	-.1	-.10	23.4
		11	42000.0	7.7	4300.0	360.0	6430.0	30.0	20.0	20.0	1.0	10.0	-.1	-.10	-.1
WY17	78	5	4500.0	7.9	2200.0	46.0	3000.0	36.0	15.0	.9	3.4	20.0	-.1	-.10	6.7
		11	26000.0	7.9	1900.0	45.0	2700.0	20.0	3.0	1.0	1.0	14.0	113.0	-.10	8.0
WY45	78	11	1350.0	8.1	690.0	340.0	1000.0	20.0	30.0	9.0	2.0	6.0	150.0	.04	3.0
WY46	78	5	1150.0	8.2	650.0	60.0	720.0	44.0	10.0	6.0	3.3	18.0	-.1	-.10	1.5
		11	1100.0	8.7	620.0	240.0	740.0	6.0	30.0	20.0	2.0	6.0	57.0	-.10	2.8
WY52	78	5	6000.0	7.9	2400.0	56.0	340.0	8.0	6.0	18.0	4.3	21.0	-.1	-.10	12.8
		11	28200.0	7.8	2200.0	45.0	3400.0	4.0	.9	2.0	2.0	11.0	98.0	-.10	9.9
WY54	78	5	2000.0	7.8	1120.0	90.0	1500.0	150.0	6.0	15.0	.9	17.0	-.1	-.10	3.0
		11	1600.0	7.4	510.0	490.0	1200.0	10.0	3.0	2.0	3.0	6.0	70.0	-.10	3.4
WY81	78	5	1850.0	8.1	13.0	34.0	1200.0	10.0	8.0	21.0	2.4	15.0	1.0	-.10	-.1
		11	2800.0	7.8	930.0	60.0	1000.0	20.0	6.0	10.0	2.0	11.0	161.0	.04	3.0

NOTE: -.1 INDICATES NOT SAMPLED

Table II A-13

CB-TRACT
WATER QUALITY PARAMETERS
LOWER AQUIFER
FOR SAMPLE DATE SHOWN

WELL	YR	MO	MG (MG/L)	NO3 (MG/L)	K (MG/L)	NA (MG/L)	SO4 (MG/L)	HCO3 (MG/L CACO3)	CA (MG/L)	CO3 (MG/L CACO3)	CL (MG/L)	LI (MG/L)	AL (MG/L)	AS (MG/L)	BA (MG/L)
WY01	78	5	2.0	6.00	.4	3400.0	86.0	2400.0	5.5	700.0	28.0	.08	.300	.010	1.00
		11	4.0	2.00	6.0	1600.0	3.0	2600.0	8.0	200.0	20.0	.04	.010	.010	3.00
WY12	78	5	3.0	9.00	.8	3200.0	140.0	490.0	11.0	.9	720.0	5.00	.500	.020	.40
		11	10.0	8.00	22.0	3000.0	190.0	3890.0	9.0	410.0	360.0	5.00	.100	.010	.40
WY17	78	5	2.0	15.00	.5	2700.0	70.0	1800.0	10.0	400.0	300.0	1.00	.200	.010	3.00
		11	7.0	.09	10.0	1300.0	4.0	1780.0	11.0	120.0	200.0	.80	.040	.010	5.00
WY45	78	11	2.0	.09	18.0	370.0	6.0	580.0	6.0	110.0	15.0	.05	.010	.010	2.00
WY46	78	5	5.0	6.30	4.0	340.0	320.0	600.0	8.9	50.0	10.0	.05	.400	.010	.70
		11	5.0	.09	3.0	380.0	9.0	580.0	8.0	40.0	9.0	.05	.200	.010	2.00
WY52	78	5	5.0	11.00	8.6	1500.0	4.0	2400.0	12.0	.9	590.0	4.00	.500	.010	.40
		11	8.0	.20	8.3	1500.0	4.0	2020.0	15.0	180.0	210.0	3.00	.200	.010	6.00
WY54	78	5	13.0	5.40	9.0	530.0	8.2	1070.0	40.0	50.0	94.0	.60	.100	.010	.40
		11	110.0	.09	3.0	230.0	400.0	490.0	46.0	20.0	13.0	.07	.200	.010	.50
WY81	78	5	2.0	4.00	.1	2400.0	66.0	13.0	5.0	.9	8.0	.10	.300	.010	1.00
		11	3.0	.20	1.0	540.0	4.0	870.0	6.0	60.0	6.0	.08	.400	.010	3.00

NOTE: -.1 INDICATES NOT SAMPLED

Table II A-13

CB-TRACT
WATER QUALITY PARAMETERS
LOWER AQUIFER
FOR SAMPLE DATE SHOWN

WELL	YR	MO	B (MG/L)	CD (MG/L)	CR (MG/L)	CU (MG/L)	F (MG/L)	FE (MG/L)	PB (MG/L)	MN (MG/L)	NI (MG/L)	ZN (MG/L)	SR (MG/L)	AG (MG/L)	MO (MG/L)
WY01	73	5	9.00	.010	.090	.100	32.00	4.00	.090	.100	.090	.090	.8	-.100	.200
		11	.90	.010	.010	.010	31.00	.40	.010	.060	.010	.010	1.0	-.100	.020
WY12	78	5	30.00	.010	.090	.100	30.00	4.00	.090	.100	.090	.900	1.0	.100	.200
		11	34.00	.010	.010	.010	32.00	1.00	.010	.100	.010	.020	1.0	.010	.500
WY17	78	5	10.00	.010	.090	.100	23.00	4.00	.200	.100	.090	.090	2.0	.010	.090
		11	8.00	.010	.010	.010	22.00	.60	.010	.060	.010	.030	2.0	-.100	.020
WY45	78	11	.80	.010	.010	.010	19.00	.40	.010	.010	.010	.010	2.0	.010	.040
WY46	78	5	.40	.010	.010	.010	18.70	.10	.200	.040	.900	.900	3.0	.010	.090
		11	.50	.010	.010	.010	19.00	.40	.010	.030	.010	.010	4.0	-.100	.020
WY52	78	5	21.00	.010	.010	.100	22.00	4.00	.600	.050	.090	.900	3.0	.010	.100
		11	20.00	.010	.010	.010	22.00	.40	.010	.040	.030	.010	3.0	-.100	.100
WY54	78	5	3.00	.010	.010	.100	9.60	4.00	.200	.010	.090	.900	3.0	.010	.090
		11	.40	.010	.010	.010	1.90	.40	.100	.090	.010	.010	4.0	-.100	.020
WY81	78	5	.70	.010	.100	.100	24.00	4.00	.090	.100	.090	.090	3.0	-.100	.300
		11	.80	.010	.010	.010	24.00	.40	.010	.010	.010	.010	3.0	.010	.020

NOTE: -.1 INDICATES NOT SAMPLED

Table II A-13

CB-TRACT
WATER QUALITY PARAMETERS
LOWER AQUIFER
FOR SAMPLE DATE SHOWN

WELL	YR	MO	PHEN (MG/L)	NH3 (MG/L)	AG (MG/L)	SE (MG/)	HG (MG/L)	BR (MG/L)	FECAL COLIF. COLONY /100ML	TOTAL COLIF. COLONY /100ML	TOTAL ALPHA PCI/L	TOTAL BETA PCI/L	RADIUM 226 PCI/L	S2O3 (MG/L)	DOC (MG/L)
WY01	78	5	.0040	2.830	-.100	-.100	.00100	.090	.9	-.1	3.0	.0	-.1	-.1	219.0
		11	.0060	2.900	-.100	.010	.01000	.090	.9	-.1	.0	8.0	-.1	8.0	79.0
WY12	78	5	.0010	3.860	.100	-.100	-.10000	.090	-.1	-.1	-.1	-.1	-.1	-.1	-.1
		11	.0030	22.000	.010	-.100	-.10000	.090	-.1	-.1	-.1	-.1	-.1	-.1	-.1
WY17	78	5	.0010	6.550	.010	-.100	-.10000	.050	-.1	-.1	-.1	-.1	-.1	-.1	-.1
		11	.0100	6.000	-.100	.010	.01000	.090	.9	-.1	.4	42.0	2.1	7.0	82.0
WY45	73	11	.0100	1.500	.010	.010	.01000	.090	.9	.9	1.2	2.0	-.1	11.0	-.1
WY46	78	5	.0010	1.100	.010	-.100	-.10000	.090	-.1	-.1	-.1	-.1	-.1	-.1	-.1
		11	.0010	1.200	-.100	.010	.01000	.090	.9	-.1	5.2	.0	-.1	10.0	50.0
WY52	78	5	.0010	9.180	.010	-.100	-.10000	.090	-.1	-.1	-.1	-.1	-.1	-.1	-.1
		11	.0070	12.000	-.100	.010	.01000	.090	.9	-.1	.4	52.0	2.0	6.0	57.0
WY54	78	5	.0020	1.420	.010	-.100	-.10000	.190	-.1	-.1	-.1	-.1	-.1	-.1	-.1
		11	.0100	1.600	-.100	.010	.01000	.090	.9	-.1	1.6	20.0	-.1	5.0	50.0
WY81	78	5	.0010	1.100	-.100	-.100	.00300	.090	.9	-.1	2.0	.0	-.1	-.1	1.0
		11	.0020	1.700	.010	.010	.01000	.090	.9	.9	2.0	9.0	-.1	11.0	-.1

NOTE: -.1 INDICATES NOT SAMPLED

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AIR QUALITY

II B AIR QUALITY

The Air Quality Program during the Development Monitoring Phase is concerned with background measurements of atmospheric gaseous constituents and with meteorological processes which affect transport and diffusion. Noise is also included in this chapter to be consistent with past reports although it is a separate discipline in the Development Monitoring Plan.

Figure II B-1 shows the location of the air quality network which includes the following:

- One air quality trailer at Station AB20 that resumed operation in July, 1978.
- One air quality trailer at Station AB23 that has been in continuous operation since September, 1974 (prior to the two-year Baseline Program).
- One sixty meter meteorological tower located at Station AB23 which also has been in continuous operation since September, 1974.
- Weighing-bucket rain gauges at Stations AB20 and AB23.
- In a cooperative program with the EPA,pibal launches, twice per day, every other day, have been made at Station AB24 since October, 1977. This program was concluded in November, 1978.
- A continuously recording acoustic radar instrument has been in operation since October, 1977 at Station AB20.
- Mechanical weather stations coupled with hi-vol particulates samplers have been in operation since February, 1978 at Stations AD42 and AD56.

Measurements taken are summarized in Table II B-1.

References 1-9 contain all the above basic data.

Locations of visibility and noise stations are shown in their respective sub-sections.

An attempt has been made to refer to all monitoring stations by their 4-digit computer station codes. A further description of these codes appears in Section IV.

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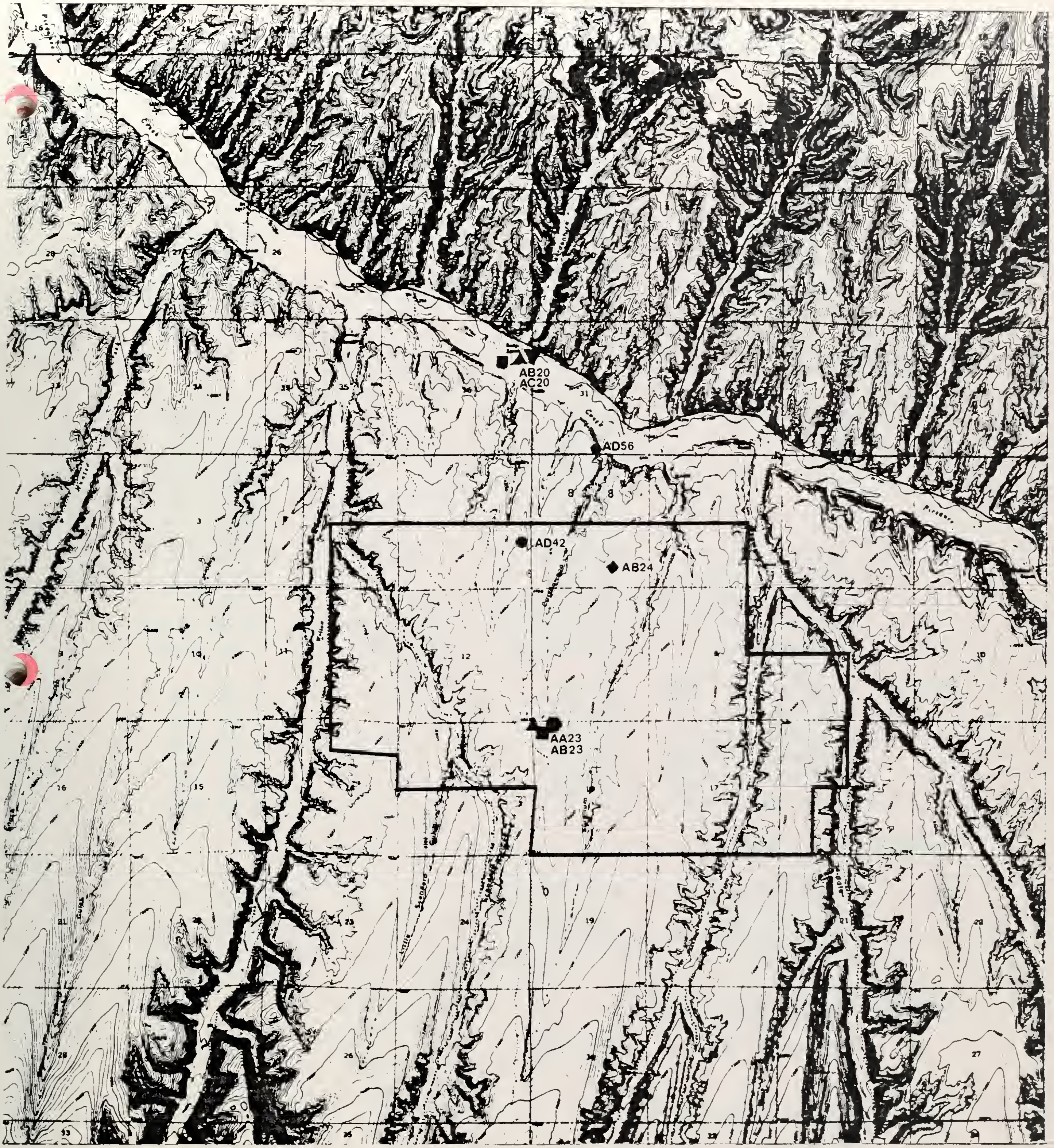

LEGEND

- ▲ Weighing-Bucket Rain Gauge
- ■ Air Quality Trailer
- ⬢ 60-M. Meteorological Tower
- ● Weather Station & Particulate Sample
- ▼ Acoustic Radar
- ◆ Pibal Launch Site

AIR QUALITY AND METEOROLOGICAL STATION LOCATIONS

Figure IIB-1

Table II B-1
AIR QUALITY AND METEOROLOGICAL MEASUREMENTS

Station AB20		Sampling Frequency	Minimum Reporting Frequency
	NO	10 sec	1 Hr Avg
	NO_x	10 sec	1 Hr Avg
	NO_2	NO_x-NO	1 Hr Avg
	O_3	10 sec	1 Hr Avg
	Wind Speed	10 sec	1 Hr Avg
	Wind Direction	10 sec	1 Hr Avg
	Temperature	10 sec	1 Hr Avg
	Particulate	24 Hr every 3 Days	24 Hr Total
	Precipitation	Continuous	1 Hr Total
Station AB23			
Trailer:	NO	20 sec	1 Hr Avg
	NO_x	20 sec	1 Hr Avg
	NO_2	NO_x-NO	1 Hr Avg
	O_3	20 sec	1 Hr Avg
	SO_2	20 sec	1 Hr Avg
	H_2S	20 sec	1 Hr Avg
	CO	20 sec	1 Hr Avg
	Baro. Press.	20 sec	1 Hr Avg
	Solar Radiation	20 sec	1 Hr Avg
	Relative Humidity	Continuous	1 Hr
	Particulates	24 Hr every 3 Days	24 Hr Total
	Precipitation	Continuous	1 Hr Total
Tower:	(@ 10m, 30m, 60m)	20 sec	1 Hr Avg
	Wind speed	20 sec	1 Hr Avg
	Wind Direction	20 sec	1 Hr Avg
	Temperature (10m)	20 sec	1 Hr Avg
	Hor. Wind Dir. 60m	20 sec	1 Hr Avg
	Delta Temp 60-10m	20 sec	1 Hr Avg
Stations AD42, AD56			
	Wind Speed	Continuous	1 Hr
	Wind Direction	Continuous	1 Hr
	Temperature	Continuous	1 Hr
	Particulate	24 Hr. every 3 Days	24 Hr Total
Acoustic Radar (Station AB20)			
	Inversion Height	Continuous	1 Hr Avg
Pibal Launches (Station AB24)			
	Wind Speed	30 sec	30 sec
	Wind Direction	30 sec	30 sec
	Temperature	Continuous	30 sec

AIR QUALITY & SURFACE
METEOROLOGY

II B-1 AIR QUALITY AND SURFACE METEOROLOGY

Air Quality Stations AB20 and AB23, the precipitation gauges at Stations AB20 and AB23, the MRI Mechanical Weather Station and hi-vol samplers were utilized to provide air quality and surface meteorological data. References 1-9 containing basic data through April, 1979, are included at the end of the air quality section.

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Table II B-3	Cross Index to Supplemental Data	II B-9
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Quarterly summary for Station AB23. This table summarizes air quality data for the quarter.

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Table II B-8	December, 1978 - February, 1979	II B-14

Monthly arithmetic ambient air constituent concentrations of gases and particulates.

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Table II B-10	Station AB23	II B-16

Maximum Concentrations

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Table II B-41	Temperature and Relative Humidity at Station AB23	II B-47
Table II B-42	Temperature at Station AD42	II B-48
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Table II B-2

MALFUNCTION CODES

Numerical Entry Code	Letter Code	Description
8000	TR	Trace of Precipitation
9000	CA	Calibration (calibration, system check)
9100	MT	Maintenance (changing paper, tape, charcoal)
9200	FO	Flame Out (on the GC- THC, HC, CH_4, CO)
9300	IM	Instrument Malfunction (instrument failures)
9400	PF	Power Failure (generator failure)
9500	RF	Recording System Failure (chart jams, runs out)
9550	NV	Not Visible (values were not within range of instrument i.e. inversion heights may exist beyond the full scale of the Acoustic Radar)
9600	LI	Local Interference (car nearby)
9650	OE	Operator Error (Field tech leaves switch in wrong position)
9700	OS	Off Scale
9750	IN	Interference (CO_2 interference on sulfur data, SO_2 interference in oxidant readings)
9800	SE	Special Experiment
9850	OR	Out for Repair (instrument removed from site with no replacement)
9900	VA	Variable Wind Direction
9950	CM	Calm (no wind direction when wind speed = 0)
9980	UN	Unlimited Ceiling (reported by NWS Stations)
9900		Blank (causes a space to be printed as in the beginning of a new month before a component starts)

Table II B-3

INDEX TO SUPPLEMENTAL DATA REPORT

Page No.

1. DIURNAL TABLES II B-895

Wind Direction and Vector Averages for Station AB20 @10m for June 1978 through September 1978.

Wind Direction and Vector Averages for Station AB23 @10m for June 1978 through September 1978.

Wind Direction and Vector Averages for Station AB23 @30m for June 1978 through September 1978.

Wind Direction and Vector Averages for Station AB23 @60m for June 1978 through September 1978.

Temperature for Station AB23 @60m for June, July and September 1978.

Solar Radiation for Station AB23 for August 1978.

Stability Class using DT/DZ for Station AB23 @10m for June 1978 through September 1978.

2. FREQUENCY TABLE OF GASEOUS CONCENTRATIONS BY DIRECTION II B-919

		No. of Monthly Reports	No. of Quarterly Reports
Oxides of Nitrogen	(NOX)	25	8
Nitrogen Dioxide	(NO_2)	25	8
Nitric Oxide	(NO)	25	
Ozone	(O_3)	25	9
Carbon Monoxide	(CO)	22	7
Total Hydrocarbons	(THC)	22	
Methane	(CH_4)	22	
Non-Methane Hydrocarbons	(NMHC)	22	
Sulfur Dioxide	(SO_2)	22	8
Hydrogen Sulfide	(H_2S)	22	8
	Total	232	48

3. FREQUENCY TABLE OF WIND SPEED BY DIRECTION II B-1199

61	Monthly reports
36	Quarterly reports
2	Yearly reports
9~~8~~9	Total

Table II B-4

CROSS INDEX TO CORRECTIONS, C-b DATA REPORTS

DIURNAL VARIATION OF GASES, PARTICULATES, AND METEOROLOGICAL DATA

Semi Annual * Report Containing Correction	Page No.	Semi Annual Report Containing Incorrect Data / Page No.	Station No.	Year	Month	Constituent Identification
2/	II B-889	1/II B-1307	AB20	78	June	Inversion Height
2/	II B-890	1/II B-1468	AB23	78	July	Barometric Pressure
2/	II B-891	1/II B-1779	AB23	78	Sept.	Temperature @60m
2/	II B-892	1/II B-1784	AB23	78	Sept.	Solar Radiation
2/	II B-893	1/II B-1757	AB23	78	Sept.	Sulfur Dioxide

* Development Monitoring Report Number 2

Table II B-5

QUARTERLY SUMMARY (SEPTEMBER 1978 - NOVEMBER 1978)
($\mu g/m^3$)
STATION AB20

PARAMETER	AVERAGE	MAXIMUM 24 HOUR		MAXIMUM 8 HOUR		MAXIMUM 3 HOUR		MAXIMUM 1 HOUR	
		VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME
Particulate	13.9 *	60.9	10/14/78						
O_3	39.7							113.8	10/7/78 1200-1300
NO_x	0							47.0	10/23/78 1400-1500
NO	0							12.0	9/19/78 0800-0900
NO_2	0							47.0	10/23/78 1400-1500
CO (1)				200.0	11/02/78 0000-0800 11/10/78 0300-1100 11/11/78 2300-0700			1100.0	10/21/78 1400-1500

* Geometric
(1) Monitoring of carbon monoxide at Station AB20 was initiated on 10/6/78.

Table II B-6

QUARTERLY SUMMARY (DECEMBER 1978 - FEBRUARY 1979)
($\mu g/m^3$)
STATION AB20

PARAMETER	AVERAGE	MAXIMUM 24 HOUR		MAXIMUM 8 HOUR		MAXIMUM 3 HOUR		MAXIMUM 1 HOUR		
		VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE		TIME
Particulate	6.9*	24.9	1/30/79							
O_3	59.0							192.3	12/29/78	1900-2000
NO_x	1.3							43	1/9/79	1500-1600
NO	0							12.0	12/8/78	1400-1500
NO_2	.3							32.0	1/11/79	1000-1100
CO	0			200.0	12/18/78 1200-2000 1/5/79 1500-2300 1/8/79 0300-1100 2/11/79 2300-0700			600.0	1/8/79	0600-0700

* Geometric

Table II B-7

QUARTERLY SUMMARY (SEPTEMBER 1978 - NOVEMBER 1978)
($\mu g/m^3$)
STATION AB23

PARAMETER	AVERAGE	MAXIMUM 24 HOUR			MAXIMUM 8 HOUR			MAXIMUM 3 HOUR			MAXIMUM 1 HOUR		
		VALUE		TIME	VALUE		TIME	VALUE		TIME	VALUE		TIME
SO_2	0	2.0	9/21/78					17.0	9/21/78	2200-0100	52.0	9/21/78	2400-0100
H_2S	0										(1)		
Particulate	10.0*	32.3	10/11/78										
O_3	74.0										153.0	9/8/78	1500-1600
NO_x	0										15.0	9/27/78	0800-0900
NO	0										6.0	11/14/78	1200-1300
CO	0				500.0	11/8/78	0700-1500				3600.0	11/8/78	1400-1500
NO_2	0										13.0	11/10/78	0900-1000

* Geometric
(1) Peak never exceeded instrument lower detection limit.

Table II B-8

QUARTERLY SUMMARY (DECEMBER 1978 - FEBRUARY 1979)
($\mu g/m^3$)
STATION AB23

PARAMETER	AVERAGE	MAXIMUM 24 HOUR			MAXIMUM 8 HOUR			MAXIMUM 3 HOUR			MAXIMUM 1 HOUR		
		VALUE		TIME	VALUE		TIME	VALUE		TIME	VALUE		TIME
SO_2	0	1.3	1/9/79					8.6	1/10/79	0700-1000	13.0	1/10/79	0800-0900 0900-1000
H_2S	0											1/23/79	1600-1700
Particulate	4.5*	12.1	1/30/79 2/26/79										
O_3	81.7										245.8	1/20/79	1800-1900
NO_x	1										43.0	1/9/79	1500-1600
NO	.7										14.0	1/20/79	0400-0500
CO	66.7				800.0	2/20/79	0800-1600				1800.0	2/20/79	1500-1600
NO_2	.3										34.0	1/20/79	0600-0700

* Geometric

Table II B-9

MONTHLY ARITHMETIC AMBIENT AIR CONSTITUENT CONCENTRATIONS
OF GASES AND PARTICULATES ($\mu g/m^3$)
STATION AB20

(1978)

CONSTITUENT	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	AVERAGE
NO (1)							1.0	0.0	0.0	0.0	0.0	0.0	(6)
NO_2 (2)							0.0	0.0	0.0	0.0	0.0	0.0	(6)
O_3 (3)							45.0	45.0	35.0	38.0	46.0	66.0	(6)
CO (4)											100.0	0.0	(6)
Particulate (7)		4.6	0.9	13.3	13.5	22.0	21.8	20.0	20.0	28.4	10.7	7.0	10.5^+

(1979)

CONSTITUENT	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	AVERAGE
NO (1)	0.0	0.0	(5)	(5)									
NO_2 (2)	1.0	0.0	(5)	(5)									
O_3 (3)	59.0	52.0	53.0	58.0									
CO (4)	0.0	0.0	0.0	0.0									
Particulate (7)	9.8	8.5	9.4	26.5									

[+] Annual geometric mean in 1978 for Particulates was 10.5 $\mu g/m^3$

(1) Monitoring of nitric oxide at StationAB20 was initiated on 7/6/78

(2) Monitoring of nitrogen dioxide at StationAB20 was initiated on 7/6/78

(3) Monitoring of ozone at StationAB20 was initiated on 7/6/78

(4) Monitoring of carbon monoxide at StationAB20 was initiated on 11/1/78

(5) instrument out for repair

(6) <50% data

(7) Monitoring of Particulates at Station AB20 was initiated on 2/1/78

Table II B-10

MONTHLY ARITHMETIC AMBIENT AIR CONSTITUENT CONCENTRATIONS
OF GASES AND PARTICULATES (μg/m^3)
STATION AB23

(1978)

CONSTITUENT	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	AVERAGE
NO	(1)	(1)	0.5	4.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.1
NO_2	(1)	(1)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
O_3	60.0	96.0	95.0	83.0	83.0	57.0	100.0	102.0	84.0	69.0	69.0	75.0	81.1
CH_4 (2)	(1)	(1)	(1)	90	874	900	1100	900	(1)				
CO	(1)	(1)	(1)	400	400	400	1300	200	0	0	100	0	311
SO_2	2.6	2.0	1.0	2.0	0.0	5.0	3.0	0.0	0.0	0.0	0.0	0.0	1.3
H_2S	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
PARTICULATE	4.6	5.3	2.1	17.3	14.8	21.0	21.7	23.9	14.5	17.6	5.5	4.7	9.1†

(1979)

CONSTITUENT	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	NOV	DEC	JAN	AVERAGE
NO	1.0	0.0	1.0	0.0									
NO_2	1.0	0.0	1.0	0.0									
O_3	80.0	90.0	85.0	87.0									
CH_4 (2)													
CO	100	100	200	200									
SO_2	0.0	0.0	1.0	0.0									
H_2S	0.0	0.0	0.0	0.0									
PARTICULATE	5.0	5.0	6.2	26.6									

† Annual geometric mean in 1978 for Particulates was 9.1 μg/m^3.
(1) 50% or less data.
(2) Monitoring of Methane (CH_4) was discontinued on September 18, 1978.

Table II B-11

MAXIMUM CONCENTRATIONS OF SO_2 ($\mu g/m^3$)

STATION AB23

(1977 - 1978) By Month

Item	Nov	Dec.	Jan.	Feb.	Mar	Apr.	May	June	July	Aug.	Sept.	Oct.
1-Hour Maximum												
Value ($\mu g/m^3$)	10.0	5.0	10.0	13.0	26.0	26.0	(3)	26.0	16.0	3.0	52.0	(3)
Date	11/26/77	12/6/77	1/5/77	(2)	3/26/78	4/6/78		6/30/78	7/2/78	8/1/78	9/21/78	
Time (MST)	1400-1500	0800-0900	2100-2200		1800	1000		(4)	0800	0900	2400	
Wind Direction (Deg.)	295	210	190	102	175	185		252.5	170	65	20	
Wind Speed (mps)	3	*	20	2	3	7		2	5	4	1	
3-Hour Maximum												
Value ($\mu g/m^3$)	5.0	5.0	10.0	15.0	20.0	20.0	(3)	24	12.0	1.0	17.0	(3)
Date	11/1/77	12/1/77	1/5/78	2/23/78	3/26/78	4/26/78		6/30/78	7/2/78	8/1/78	9/21/78	
Time (MST)	1600-1900	0800-1100	1900-2200	0200	1600	1000		1700	0600	0700	2200	
Wind Direction (Deg.)	155	(1)	190	85	160	185		250	75	82	34	
Wind Speed (mps)	2	1	7	1	3	6		2	1	4	2	
24-Hour Maximum												
Value ($\mu g/m^3$)	5.0	0.0	5.0	10.0	15.0	10.0	(3)	11.0	11.0	0.1	2.0	(3)
Date	11/25/77	12/8/77	1/15/78	2/22/78	3/25/78	4/13/78		6/11/78	7/9/78	8/1/78	9/21/78	
Time (MST)	1600	0900	1200	1600	2300	0000		0200	0100	0100	0100	
Wind Direction (Deg.)	225	210	225	150	180	180		220	285	128	206	
Wind Speed (mps)	3	2	2	2	1	3		3	3	4	2	

(1978-1979) By Month

Item	Nov	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1-Hour Maximum												
Value ($\mu g/m^3$)	(3)	(3)	13	(3)	4	1						
Date					3/27/79	4/1/79						
Time (MST)			(6)		0900	0100						
Wind Direction (Deg.)			325		173	201						
Wind Speed (mps)			0		6	1						
3-Hour Maximum												
Value ($\mu g/m^3$)	(3)	(3)	8.6	0.5	1.6	0.8						
Date			1/10/79	2/16/79	3/27/79							
Time (MST)			0700	1500	0700	(7)						
Wind Direction (Deg.)			13	267	168	201						
Wind Speed (mps)			0	5	5	1						
24-Hour Maximum												
Value ($\mu g/m^3$)	(3)	(3)	1.3	0.5	0.8	0.8						
Date			1/9/79	2/16/79	(6)	4/1/79						
Time (MST)			1000	1500		0100						
Wind Direction (Deg.)			13	267	225	225						
Wind Speed (mps)			1	5	3	10						

* Missing Data
(1) No Data. Instrument Malfunction
(2) Maximum concentration occurred 8 times: on 2/20/78 @ 1100 and 1200; on 2/22/78 @ 2100 & 2200 and on 2/23/78 @ 0200, 0300, 0400, 0700
(3) Peak never went above instrument lower detection limit of instrument
(4) Maximum concentration occurred 2 times: on 6/30/78 @ 1700 & 1800
(5) The hourly maximum value for SO_2, occurred twice: 1/10/79 @ 0800, 0900
(6) Maximum concentration occurred 3 times: on 3/28/79 @ 1800; 3/29/79 @ 1800; 3/30/79 @ 1800
(7) Maximum concentration occurred 5 times: on 4/1/79 @ 0100, 0400, 0700, 1000, 1300

Table II B-12

MAXIMUM CONCENTRATIONS OF H_2S ($\mu g/m^3$)

STATION AB23

(1977 - 1978)

ITEM	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
1-Hour Maximum												
Value ($\mu g/m^3$)	25.0	0.0	5.0	4.0	(2)	35.0	(2)	3.0	(2)	14.0	(2)	(2)
Date	11/28/78	12/3/77	1/5/78	2/3/78		4/17/78		(3)		(4)		
Time (MST)	0300-0400	1000-1100	2200-2300	(1)		1000						
Wind Direction (Deg.)	170	245	187	202		295		270		(VA)		
Wind Speed (mps)	1	4	8	6		5		2		1		

(1978 - 1979)

ITEM	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
1-Hour Maximum												
Value ($\mu g/m^3$)	(2)	(2)	12.0	3.0	5.0							
Date			1/23/79	(5)	3/1/79							
Time (MST)			1600		1100							
Wind Direction (Deg.)			195	121	180							
Wind Speed (mps)			3	1	11							

(1) Maximum concentration occurred 5 times: on 2/3/78 from hours 1400-1800. Associated wind speed and direction are averaged.
(2) Peak never exceeded instrument lower detection limit.
(3) Maximum concentration occurred 8 times: 6/3/78 @ 0200, 0600, 1400, 1700; 6/5/78 @ 0500, 2400; 6/6/78 @ 0100, 1400.
(4) Maximum concentration occurred 2 times: 8/8/78 @ 1900; 8/14/78 @ 1700.
(5) Maximum concentration occurred 3 times: 2/25/79 @ 0100, 0200, 0300.
(VA) Variable wind direction.

Table II B-13

MAXIMUM CONCENTRATION OF CO ($\mu g/m^3$) *

STATION AB20

(1978-1979)

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1-Hour Maximum												
Value ($\mu g/m^3$)	200.0	300.0	600.0	300.0	300.0	600.0						
Date	(1)	12/28/78	1/8/79	(4)	(5)	4/12/79						
Time (MST)		1100	0600			1200						
Wind Direction (Deg)	(VA)	180	90	(VA)	100	(VA)						
Wind Speed (mps)	1	4	1	0	1	2						
8-Hour Maximum												
Value ($\mu g/m^3$)	200.0	200.0	200.0	200.0	200.0	100.0						
Date	(2)	12/18/78	(3)	2/11/79	3/28/79	(6)						
Time (MST)		1200		2300	2100							
Wind Direction (Deg)	195	118	275	137	300	304						
Wind Speed (mps)	1	3	1	4	2	1						

* Monitoring of Carbon Monoxide at Station AB20 was initiated on 10/9/78

VA Variable Wind Direction

(1) Maximum concentration occurred 23 times during November

(2) Maximum concentration occurred 3 times: 11/2/78 @ 2400; 11/10/78 @ 0300, 2300

(3) Maximum concentration occurred 2 times: 1/5/79 @ 1500; 1/8/79 @ 0300

(4) Maximum concentration occurred 4 times: 2/20/79 @ 1200, 1300, 1400; 2/15/79 @ 0700

(5) Maximum concentration occurred 4 times: 3/7/79 @ 1800, 1900; 3/29/79 @ 0100, 0300

(6) Maximum concentration occurred 5 times: 4/10/79 @ 0500; 4/12/79 @ 0500; 4/23/79 @ 0500; 4/24/79 @ 0500; 4/27/79 @ 0100

Table II B-14

MAXIMUM CONCENTRATIONS OF CO ($\mu g/m^3$)

STATION AB23

(1977 - 1978) By Month

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.*	Oct.
1-Hour Maximum												
Value ($\mu g/m^3$)	130.0	(1)	(1)	(1)	500.0	800.0	3000.0	2100.0	4200.0	1100.0	500.0	300.0
Date	11/1/77				3/28/78	4/16/78	5/27/78	6/14/78	7/25/78	8/4/78	9/29/78	10/3/78
Time (MST)	0000				1000	1600	0800	2100	0800	0700	1500	1100
Wind Direction (Deg.)	230				315	230	300	185	195	65	360	10
Wind Speed (mps)	1				2	6	1	5	5	1	3	2
8-Hour Maximum												
Value ($\mu g/m^3$)	90.0	(1)	(1)	(1)	400.0	600.0	1600.0	1030.0	4000.0	360.0	290.0	200.0
Date	11/1/77				3/30/78	4/23/78	5/30/78	6/1/78	7/25/78	8/2/78	8/29/78	10/6/78
Time (MST)	0000-0800				0800	2200	1800	1500	0100	0400	1300	1000
Wind Direction (Deg.)	175				195	205	140	235	128	140	144	166
Wind Speed (mps)	1				5	1	6	4	2	1	3	3

(1978 - 1979) By Month

Item	Nov	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1-Hour Maximum												
Value ($\mu g/m^3$)	3600.0	500.0	700.0	1800.0	1900.0	1500.0						
Date	11/8/78	12/14/78	1/21/79	2/20/79	3/19/79	4/8/79						
Time (MST)	1400	1300	0900	1500	1500	0700						
Wind Direction (Deg.)	210			105	332	(VA)						
Wind Speed (mps)	4	6	2	1	2	(CM)						
8-Hour Maximum												
Value ($\mu g/m^3$)	500.0	300.0	600.0	800.0	700.0	1000.0						
Date	11/8/78	12/20/78	1/21/79	2/20/79	3/19/79	4/17/79						
Time (MST)	0700	0200	0800	0800	0800	0300						
Wind Direction (Deg.)	103	285	8	295	113	101						
Wind Speed (mps)	1	1	2	2	1	3						

* On September 12, 1978, the gas chromatograph at Station AB23 was replaced with a new N.D.I.R. monitor

(1) No data. Instrument malfunction
(VA) Variable Wind Direction
(CM) Calm

Table II B-15

MAXIMUM CONCENTRATIONS OF OZONE ($\mu g/m^3$)*

STATION AB20

(1977 - 1978) By Month

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1 - Hour Maximum												
Value ($\mu g/m^3$)									157.0	84.0	90.0	113.8
Date									7/11/78	8/19/78	9/18/78	10/7/78
Time (MST)									1100-1200	1800-1900	0800-0900	1200-1300
Wind Direction (Deg)									183	235	270	312
Wind Speed (mps)									4	3	1	3

(1978 - 1979) By Month

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1 - Hour Maximum												
Value ($\mu g/m^3$)	106.0	192.3	111.2	157.0	133.0	182.5						
Date	11/5/78	12/29/78	1/7/79	2/18/79	3/26/79	4/26/79						
Time (MST)	1700-1800	1900-2000	1400-1500	1700-1800	2000-2100	1400-1500						
Wind Direction (Deg)	297	273	300	175	(VA)	295						
Wind Speed (mps)	7	4	2	1	1	4						

* Monitoring of ozone at station AB20 was initiated on 7/6/78

(VA) Variable Wind Direction

Table II B-16

MAXIMUM CONCENTRATIONS OF OZONE ($\mu g/m^3$)

STATION AB23

(1977-1978)

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1-Hour Maximum												
Value ($\mu g/m^3$)	85.0	75.0	80.0	130.0	145.0	140.0	130.0	24.0	145.0	161.0	153.0	96.0
Date	11/10/77	12/8/77	1/25/78	2/26/78	3/8/78	4/21/78	5/11/78	6/30/78	7/7/78	8/27/78	9/8/78	10/5/78
Time (MST)	1300	1200	1600	1400	1200	0700	1400	1700	1200	1800	1500	1600
Wind Direction (Deg.)	250	315	180	210	200	190	235	250	200	320	69	5
Wind Speed (mps)	1	5	7	6	1	1	9	2	6	6	3	4

(1978-1979)

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1-Hour Maximum												
Value ($\mu g/m^3$)	98.0	94.2	245.8	118.5	117.0	119.0						
Date	11/12/78	12/14/78	1/20/79	2/23/79	3/30/79	4/8/79						
Time (MST)	2100	2000	1800	1500	1200	1600						
Wind Direction (Deg.)	227	183	10	160	184	278						
Wind Speed (mps)	8	6	2	7	5	2						

Table II B-17

MAXIMUM CONCENTRATIONS OF NOX($\mu g/m^3$)*
STATION AB20

(1977 - 1978) By Month

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1-Hour Maximum												
Value ($\mu g/m^3$)									45	8	19	47
Date									7/20/78	8/9/78	9/19/78	10/23/78
Time (MST)									0400	2000	0800	1400
Wind Direction (Deg.)									95	112	(MT)	255
Wind Speed (mps)									2	2	1	2

(1978 - 1979) By Month

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1-Hour Maximum					(1)	(1)						
Value ($\mu g/m^3$)	15	24	43	13								
Date	11/20/78	12/8/78	1/9/79	2/14/79								
Time (MST)	1100	1500	1500	0900								
Wind Direction (Deg.)	(VA)	90	295	95								
Wind Speed (mps)	1	2	2	1								

* Monitoring of NOX at Station AB20 was initiated on 7/6/78
(MT) Instrument down for maintenance
(1) Instrument out for repair
(VA) Variable Wind Direction

Table II B-18

MAXIMUM CONCENTRATIONS OF NOX($\mu g/m^3$)
STATION AB23

(1977 - 1978) By Month

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1-Hour Maximum												
Value ($\mu g/m^3$)	(1)	(1)	150.0	(1)	25.0	6.0	4.0	4.0	47.0	11.0	15.0	11.0
Date			1/18/78		3/14/78	4/26/78	5/1/78	6/21/78	7/22/78	8/2/78	9/27/78	10/3/78
Time (MST)			1300		0800	0400	0200	0200	1600	0600	0800	0800
Wind Direction (Deg.)			225		340	185	215	165	350	390		50
Wind Speed (mps)			3		1	4	1	1	3	1		1

(1978 - 1979) By Month

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1-Hour Maximum												
Value ($\mu g/m^3$)	6.0	23.0	43.0	13.0	21.0	11.0						
Date	11/14/78	12/8/78	1/9/79	2/14/79	3/21/79	4/8/79						
Time (MST)	1200	1400	1500	0900	1000	0700						
Wind Direction (Deg.)	350	55	123	227	311							
Wind Speed (mps)	1	1	1	5	1							

(CM) Calm
(VA) Variable Wind Direction
(1) No Data. Instrument Malfunction

Table II B-19

MAXIMUM CONCENTRATIONS OF NO ($\mu g/m^3$)*

STATION AB20

(1977 - 1978)

ITEM	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
1-Hour Maximum												
Value ($\mu g/m^3$)									29.0	4.0	12.0	10.0
Date									7/20/78	8/9/78	9/18/78	10/18/78
Time (MST)									0400-0500	2000-2100	0800-0900	0800-0900
Wind Direction (Deg.)									95	112	270	81
Wind Speed (mps)									2	2	1	2

(1978-1979)

ITEM	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
1 Hour Maximum												
Value ($\mu g/m^3$)	5.0	12.0	10.0	4.0	(2)	(2)						
Date	11/20/78	12/8/78	1/11/79	(1)								
Time (MST)	1100-1200	1400-1500	0500-0600									
Wind Direction (Deg.)	(VA)	100	115	267								
Wind Speed (mps)	1	1	3	4								

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* Monitoring of nitric oxide at Station AB20 was initiated on 7/6/78.

(1) Maximum concentration occurred 6 times: 2/16/79 @ 1500, 1600, 1700, 1900; 2/17/79 @ 1800, 1900.

(2) Instrument out for repair.

(VA) Variable Wind Direction.

Table II B-20

MAXIMUM CONCENTRATIONS OF NO ($\mu g/m^3$)

STATION AB23

(1977-1978)

Item	Nov.	Dec.	Jan.*	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1-Hour Maximum												
Value ($\mu g/m^3$)	(1)	(1)	55.0	2.0	4.0	12.0	7.0	1.0	4.0	4.0	2.0	4.0
Date			1/18/78	2/3/78	(3)	(4)	(5)	(6)	(7)	8/19/78	(8)	(9)
Time (MST)			1300-1400	(2)						1400-1500		
Wind Direction (Deg)			330	210	200	320	230	200	188	255	(VA)	335
Wind Speed (mps)			3	6	2	4	4	2	2	4	0	1

(1978-1979)

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1-Hour Maximum												
Value ($\mu g/m^3$)	6	4	14	5	6	3						
Date	11/14/78	12/30/78	1/20/79	2/5/79	3/21/79	4/1/79						
Time (MST)	1200-1300	1500-1600	0400-0500	1200-1300	1000-1100	1100-1200						
Wind Direction (Deg)	350	328	112	15	311	340						
Wind Speed (mps)	1	1	1	2	1	1						

*	A New Monitor Labs 8440E instrument was installed in January 1978
VA	Variable wind
(1)	No Data. Instrument Failure.
(2)	Maximum concentration occurred 2 times: 2/3/78 @ 1500 & 1600
(3)	Maximum concentration occurred 3 times: 3/30/78 @ 2200: 3/31/78 @ 0600 & 0700
(4)	Maximum concentration occurred 2 times: 4/19/78 @ 1200: 4/22/78 @ 0800
(5)	Maximum concentration occurred 3 times: 5/7/78 @ 0600: 5/13/78 @ 1300: 5/18/78 @ 0900
(6)	Maximum concentration occurred 17 times during June
(7)	Maximum concentration occurred 2 times: 7/7/78 @ 1000: 7/25/78 @ 1400
(8)	Maximum concentration occurred 2 times: 9/24/78 @ 0800: 9/26/78 @ 0100
(9)	Maximum concentration occurred 2 times: 10/3/78 @ 0300: 10/3/78 @ 0800

Table II B-21

MAXIMUM CONCENTRATIONS OF NO_2 ($\mu g/m^3$)*

STATION AB20

(1977 - 1978) By Month

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1-Hour Maximum												
Value ($\mu g/m^3$)									19.0	6.0	4.0	47.0
Date									7/31/78	(1)	9/20/78	10/23/78
Time (MST)									0900-1000		0800-0900	1400-150
Wind Direction (Deg.)									108	111	RF	255
Wind Speed (mps)									8	2	RF	2

(1978 - 1979) By Month

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1-Hour Maximum												
Value ($\mu g/m^3$)	8.0	17.0	32.0	11.0	(2)	6.0						
Date	11/20/78	12/15/78	1/11/79	2/14/79		(3)						
Time (MST)	1100-1200	1800-1900	1000-1100	0900-1000								
Wind Direction (Deg.)	(VA)	80	135	95		VA						
Wind Speed (mps)	1	1	2	1		2						

*	Monitoring of nitrogen dioxide at Station AB20 was initiated on 7/6/78
VA	Variable Wind Direction
RF	Recording failure
(1)	Maximum concentration occurred 4 times: 8/11/78 @ 0600, 0700 and 0800; 8/12/78 @ 0100
(2)	Instrument out for repair
(3)	Maximum concentration occurred 2 times: 4/2/79 @ 1300 and 1400

Table II B-22

MAXIMUM CONCENTRATIONS OF NO_2 ($\mu g/m^3$)

STATION AB23

(1977 - 1978)

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1 Hour Maximum												
Value ($\mu g/m^3$)	(1)	(1)	65.0	(1)	53.0	(2)	(2)	4.0	45.0	9.0	4.0	6.0
Date			1/18/78		3/27/78			(3)	7/22/78	8/2/78	9/20/78	(4)
Time (MST)			1300-1400		1000-1100				1600-1700	0600-0700	0800-0900	
Wind Direction (Deg.)			330		70			108	350	390	CM	245
Wind Speed (mps)			3		1			1	1	1	2	1

(1978 - 1979)

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1 Hour Maximum												
Value ($\mu g/m^3$)	13	21	34	4	11	8						
Date	11/10/78	12/8/78	1/20/79	(5)	3/21/79	(6)						
Time (MST)	0900	1400	0600		1000-1100							
Wind Direction (Deg.)	5	55	76	15	311	199						
Wind Speed (mps)	1	1	1	2	1	0						

* A new Monitor Labs 8440E instrument was installed in January 1978.

CM Calm wind

(1) No data. Instrument malfunction
(2) Maximum concentration never exceeded zero.
(3) Maximum concentration occurred 2 times: 6/21/78 @ 0200 & 0400.
(4) Maximum concentration occurred 2 times: 10/3/78 @ 0200 & 0800.
(5) Maximum concentration of NO_2 occurred 6 times: 2/5/79 @ 1200; 2/24/79 @ 0600; 2/27/79 @ 1100, 1200, 1300 & 2300.
(6) Maximum concentration of NO_2 occurred 3 times: on 4/3/79 @ 0400; 4/8/79 @ 0700; 4/27/79 @ 0700

Table II B-23

MAXIMUM CONCENTRATIONS OF PARTICULATES ($\mu g/m^3$)*

STATION AB20

(1977-1978)

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
24-Hour Maximum Value ($\mu g/m^3$) Date				6.4 2/13/78	4.2 3/9/78	28.3 4/24/78	33.8 5/24/78	30.9 6/2/78	33.7 7/26/78	32.1 8/10/78	24.2 9/9/78	60.9 10/14/78

(1978-1979)

Item	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.
24-Hour Maximum Value ($\mu g/m^3$) Date	29.6 11/7/78	13.5 12/16/78	24.9 1/30/79	17.2 2/14/79	26.7 3/16/79	63.2 4/18/79						

* Monitoring of Particulates at Station AB20 was initiated 2/10/78

Table II B-24

MAXIMUM CONCENTRATIONS OF PARTICULATES ($\mu g/m^3$)

STATION AB23

(1977 - 1978) By Month

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
24-Hour Maximum Value ($\mu g/m^3$) Date	15 11/18/77	8 12/12/77	7 1/24/78	14.0 2/16/78	5.5 3/21/78	33.0 4/9/78	28.0 5/27/78	33.1 6/2/78	32.0 7/26/78	64.1 8/10/78	23.3 9/27/78	32.3 10/11/78

(1978 - 1979) By Month

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
24-Hour Maximum Value ($\mu g/m^3$) Date	13.9 11/7/78	8.0 12/13/78	12.1 1/30/79	12,1 2/26/79	21.6 3/16/79	18.6 4/18/79						

Table II B-25

MAXIMUM CONCENTRATIONS OF PARTICULATES (μg/m^3)

STATION AD42

(1977-1978)

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
24-Hour Maximum Value (μg/m^3) Date			(1)	16.8 2/1/78	0.0 3/29/78	25.2 4/11/78	38.7 5/24/78	52.0 6/17/78	42.7 7/5/78	22.8 8/7/78	24.5 9/15/78	48.0 10/11/78

(1978-1979)

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
24-Hour Maximum Value (μg/m^3) Date	15.4 11/7/78	5.6 12/13/78	11.0 1/12/79	(2)								

(1) Monitoring of particulates at Station AD42 was initiated on 2/1/78

(2) Monitoring of particulates at Station AD42 was discontinued on 1/24/79

Table II B-26

MAXIMUM CONCENTRATIONS OF PARTICULATES (µg/m^3)

STATION AD56

(1977-1978)

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
24-Hour Maximum Value (µg/m^3) Date	*	*	*	6.8 2/16/78	9.6 3/30/78	13.3 4/24/78	39.9 5/24/78	25.0 6/23/78	23.9 7/26/78	37.7 8/13/78	40.6 9/15/78	56.4 10/17/78

(1978-1979)

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
24-Hour Maximum Value (µg/m^3) Date	25.6 11/7/78	8.6 12/28/78	12.6 1/30/79	10.9 2/14/79	24.0 3/16/79	49.3 4/18/79						

* Monitoring of particulates at Station AD56 was initiated on 2/1/78

Table II B-27

METEOROLOGICAL SUMMARY: VECTOR MONTHLY AVERAGES FOR WINDS*

(10 Meter Level)
STATION AB20

(1977 - 1978)

ITEM	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
Wind Speed (mps)				2.0	2.0	1.0	1.0	1.3	0.9	0.8	0.8	0.3
Wind Direction (Deg.)				140.0	150.0	160.0	180.0	175.0	136.0	147.0	124.0	135.0

(1978 - 1979)

ITEM	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
Wind Speed (mps)	0.3	0.8	0.9	1.3	0.6	1.1						
Wind Direction (Deg.)	154.0	123.0	116.0	130.0	131.0	170.0						

* Monitoring of wind parameters initiated on 2/1/78.

Table II B-28

METEOROLOGICAL SUMMARY: VECTOR MONTHLY AVERAGES FOR WINDS

(10 Meter Level)
STATION AB23

(1977 - 1978)

ITEM	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
Wind Speed (mps)	2.0	3.0	2.0	2.0	2.0	2.0	2.0	2.4	1.9	1.7	1.5	0.7
Wind Direction (Deg.)	205.0	215.0	190.0	185.0	185.0	210.0	200.0	215.0	204.0	203.0	228.0	255.0

(1978 - 1979)

ITEM	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
Wind Speed (mps)	1.4	2.3	1.4	1.9	0.9	1.9						
Wind Direction (Deg.)	215.0	212.0	206.0	196.0	207.0	208.0						

Table II B-29

METEOROLOGICAL SUMMARY: VECTOR MONTHLY AVERAGES FOR WINDS

(30 Meter Level)
STATION AB23

(1977 - 1978)

ITEM	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
Wind Speed (mps)	3.0	3.0	2.0	2.0	2.0	3.0	3.0	2.5	2.1	1.8	1.6	0.8
Wind Direction (Deg.)	200.0	205.0	190.0	185.0	185.0	205.0	210 0	215.0	198.0	220.0	227.0	270.0

(1978 - 1979)

ITEM	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
Wind Speed (mps)	1.6	4.9	} *	} *	} *							
Wind Direction (Deg.)	236.0	220.0										

* Instrument Malfunction.

Table II B-30

METEOROLOGICAL SUMMARY: VECTOR MONTHLY AVERAGES FOR WINDS

(60 Meter Level)
STATION AB23

(1977 - 1978)

ITEM	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
Wind Speed (mps)	3.0	4.0	2.0	2.0	2.0	3.0	3.0	2.8	2.2	2.0	1.7	0.9
Wind Direction (Deg.)	215.0	220.0	200.0	200.0	200.0	215.0	215.0	224.0	210.0	211.0	216.0	276.0

(1978 - 1979)

ITEM	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
Wind Speed (mps)	*	*	2.1	2.7	1.3	2.6						
Wind Direction (Deg.)			218.0	213.0	237.0	230.0						

* Instrument Malfunction.

Table II B-31

METEOROLOGICAL SUMMARY: WIND SPEED & DIRECTION
Station AB20(1)

(1977-1978)

ITEM	MONTH											
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
Wind Speed, Hourly Max. (mps) & Associated Direction (Deg.)				7.0 132.6*	7.0 277.5*	9.0 247.8*	9.0 320.0	8.0 208.4*	8.0 245.0	6.0 218.2*	9.0 131.9*	6.0 200.0
Wind Speed, Hourly Avg. (mps) & Wind Direction Hourly Avg. (Deg)				2.0 6.0	3.0 6.0	3.0 6.0	3.0 6.0	4.0 134.0	3.0 108.0	2.0 113.0	3.0 85.0	2.0 102.0

(1978-1979)

ITEM	MONTH											
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
Wind Speed, Hourly Max. (mps) & Associated Direction (Deg.)	8.0 300.0	6.0 125.8*	7.0 130.0	6.0 130.4*	8.0 303.6*	8.0 249.0*						
Wind Speed, Hourly Avg. (mps) & Wind Direction Hourly Avg. (Deg)	2.0 88.0	2.0 212.0	2.0 90.0	2.0 108.0	2.0 99.0	3.0 140.0						

* Maximum wind speed was reached >1 time. Associated Direction was computed as a vector mean.

(1) Monitoring of wind speed & wind direction at Station AB20 was intiated on February 1, 1978.

Table II B-32

METEOROLOGICAL SUMMARY: WIND SPEED & DIRECTION
STATION AB23
(10 Meter Height)

(1977 - 1978)

ITEM	MONTH											
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT
Wind Speed, Hourly Max. (mps) &	11.0	10.0	11.0	9.0	9.0	12.0	13.0	13.0	11.0	13.0	16.0	14.0
Associated Direction (Deg.)	195.0	200.6	180.0	215.0	215.0	205.0	195.0	210.0	180.0	240.0	259.0	255.0
Wind Speed, Hourly Avg. (mps) &	3.0	3.0	3.0	2.0	3.0	2.0	4.0	4.0	4.0	4.0	3.0	3.0
Wind Direction Hourly Avg.(Deg.)	205.0	205.0	195.0	185.0	155.0	195.0	205.0	235.0	198.0	206.0	237.0	301.0

(1978 - 1979)

ITEM	MONTH											
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
Wind Speed, Hourly Max. (mps) &	13.0	6.0	10.0	14.0	11.0	10.0						
Associated Direction (Deg.)	202.0	215.0	208.0	195.0	180.0	208.0						
Wind Speed, Hourly Avg. (mps) &	2.0	2.0	3.0	3.0	2.0	3.0						
Wind Direction Hourly Avg.(Deg)	231.0	212.0	197.0	195.0	230.0	225.0						

Table II B-33

METEOROLOGICAL SUMMARY: WIND SPEED & DIRECTION
STATION AB23
(30 Meter Height)

(1977 - 1978)

ITEM	MONTH											
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
Wind Speed, Hourly Max. (mps)	12.0	12.0	13.0	9.0	10.0	12.0	11.0	13.0	10.0	11.0	13.0	13.0
&												
Associated Direction (Deg.)	201.1*	205.0	180.0*	205.0	195.1*	185.0	200.0*	210.0	189.6*	230.0	199.8*	235.0
Wind Speed, Hourly Avg. (mps)	4.0	4.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	3.0	2.0
&												
Wind Direction, Hourly Avg.(Deg.)	9.0	10.00	9.0	9.0	9.0	10.0	10.0	237.0	188.0	218.0	249.0	301.0

(1978 - 1979)

ITEM	MONTH											
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
Wind Speed, Hourly Max. (mps)	13.0	(1)	(1)	(1)	(1)	(1)						
&												
Associated Direction (Deg.)	223.0	(1)	(1)	(1)	(1)	(1)						
Wind Speed, Hourly Avg. (mps)	2.0	(1)	(1)	(1)	(1)	(1)						
&												
Wind Direction, Hourly Avg. (Deg.)	251.0	(1)	(1)	(1)	(1)	(1)						

* Maximum wind speed occured >1 time. Associated Direction was computed as a vector mean.
(1) <50% Data - (Instrument Malfunction)

Table II B-34

METEOROLOGICAL SUMMARY: WIND SPEED & DIRECTION
STATION AB23
(60 Meter Height)

(1977 - 1978)

ITEM	MONTH											
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
Wind Speed, Hourly Max. (mps)	14.0	14.0	13.0	10.0	10.0	12.0	11.0	14.0	11.0	12.0	16.0	10.0
&												
Associated Direction (Deg.)	220.0	220.0	190.0	217.5*	203.8*	190.0	200.0*	220.0	190.0	210.0*	190.0	245.0
Wind Speed, Hourly Avg. (mps)	4.0	5.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0
&												
Wind Direction Hourly Avg.(Deg.	10.0	11.0	10.0	10.0	10.0	10.0	10.0	246.0	208.0	215.0	241.0	280.0

(1978 - 1979)

ITEM	MONTH											
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
Wind Speed, Hourly Max. (mps)	(1)	(1)	13.0	16.0	12.0	12.0						
&												
Associated Direction (Deg.)	(1)	(1)	232.0	205.0	206.0	231.0						
Wind Speed, Hourly Avg. (mps)	(1)	(1)	3.0	4.0	3.0	4.0						
&												
Wind Direction Hourly Avg.(Deg.)	(1)	(1)	220.0	215.0	266.0	250.0						

* Maximum wind speed occurred >1 time. Associated Direction was computed as a vector mean.
(1) <50% Data - Instrument Malfunction.

Table II B-35

METEOROLOGICAL SUMMARY: WIND SPEED & DIRECTION
STATION A042(1)

(1977 - 1978)

ITEM	MONTH											
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
Wind Speed, Hourly Max. (mps)				8.0	(2)	(3)	(2)	12.0	11.0	13.0	15.0	11.0
&												
Associated Direction (Deg.)				224.3*	(2)	(3)	(2)	264.6*	213.0	213.0	211.0	202.3*
Wind Speed, Hourly Avg. (mps)				3.0	(2)	(3)	(2)	4.0	3.0	4.0	3.0	3.0
&												
Wind Direction Hourly Avg.(Deg.)				6.0	(2)	(3)	(2)	183.0	167.0	158.0	125.0	52.0

(1978 - 1979)

ITEM	MONTH											
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
Wind Speed, Hourly Max. (mps)	11.0	12.0	9.0	(4)	(4)	13.0						
&												
Associated Direction (Deg.)	163.0	258.0	198.5*	(4)	(4)	187.5*						
Wind Speed, Hourly Avg. (mps)	2.0	3.0	2.0	(4)	(4)	3.0						
&												
Wind Direction, Hourly Avg.(Deg)	158.0	143.0	135.0	(4)	(4)	156.0						

* Maximum wind speed was reached > 1 time. Associated Direction was computed as a vector mean.
(1) Monitoring of wind speed and wind direction at Station AD42 was initiated Feb. 1, 1978.
(2) <50% data.
(3) Recording failure
(4) Out for repair

Table II B-36

METEOROLOGICAL SUMMARY: WIND SPEED & DIRECTION
STATION AD56(1)

(1977 - 1978)

ITEM	MONTH											
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
Wind Speed, Hourly Max. (mps)				5.0	6.0	7.0	8.0	(2)	(2)	(3)	6.0	(4)
&												
Associated Direction (Deg.)				138.8*	198.9*	315.0*	300.0*	(2)	(2)	(3)	250.0	(4)
Wind Speed, Hourly Avg. (mps)				2.0	2.0	2.0	3.0	(2)	(2)	(3)	2.0	(4)
&												
Wind Direction, Hourly Avg. (Deg.)				6.0	6.0	7.0	6.0	(2)	(2)	(3)	188.0	(4)

(1978 - 1979)

ITEM	MONTH											
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
Wind Speed, Hourly Max. (mps)	(2)	(3)	(2)	(3)	6.0	9.0						
&												
Associated Direction (Deg.)	(2)	(3)	(2)	(3)	316.1*	182.0						
Wind Speed, Hourly Avg. (mps)	(2)	(3)	(2)	(3)	2.0	2.0						
&												
Wind Direction, Hourly Avg. (Deg.)	(2)	(3)	(2)	(3)	129.0	150.0						

* Maximum wind speed was reached >1 time. Associated direction was computed as a vector mean.
(1) Monitoring of wind speed and wind direction at Station AD56 was initiated February 1, 1978.
(2) Instrument out for repair.
(3) <50% data.
(4) Recording failure.

Table II B-37

SUMMARY OF PRECIPITATION AT TWO STATIONS
(Measured with weighing rain gauge)

(1977 - 1978)

STATION	ITEM	MONTH											
		NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
AB20	1-Hour Max. (Cm) Date Time (MST)	.53 11/19/77 16:00	.41 12/16/77 02:00	.13 (1)	.10 (3)	.46 3/24/78 08:00	.18 4/5/78 05:00	.69 5/21/78 14:00	.76 6/5/78 14:00	.30 7/29/78 13:00	.25 8/1/78 21:00	.48 9/18/78 05:00	.18 10/22/78 03:00
AB23	1-Hour Max. (Cm) Date Time (MST)	.33 11/19/77 16:00	.28 12/16/77 01:00	.10 (2)	.30 2/27/78 22:00	.51 3/24/78 09:00	.23 4/2/78 16:00	1.35 5/21/78 14:00	.20 6/5/78 15:00	1.17 7/29/78 14:00	.33 8/1/78 06:00	.36 9/18/78 06:00	.10 10/22/78 03:00
AB20	24-Hour Max. (Cm) Date	2.77 11/19/77	1.60 12/16/77	.56 1/15/78	.53 2/20/78	1.45 3/24/78	.38 4/5/78	1.22 5/17/78	1.09 6/5/78	.43 7/29/78	.46 8/1/78	.97 9/18/78	.20 10/22/78
A823	24-Hour Max. (Cm) Date	1.85 11/19/77	.84 12/16/77	.43 1/15/78	.66 2/20/78	1.70 3/14/78	.71 4/1/78	1.65 5/21/78	.38 6/5/78	1.22 7/29/78	.48 8/1/78	.91 9/18/78	.10 10/22/78
AB20	Total (Cm)	4.37	3.43	3.02	2.11	8.13	1.70	3.99	2.57	2.18	2.36	1.83	.58
AB23	Total (Cm)	3.66	2.16	1.65	2.64	8.36	2.29	3.94	1.30	1.98	.48	1.40	.20

(1978 - 1979)

STATION	ITEM	MONTH											
		NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT
A820	1-Hour Max. (Cm) Date Time (MST)	.33 11/11/78 0600	.41 12/09/78 1400	.38 1/17/79 1900	.15 (4)	.23 3/17/79 0500	.23 4/11/79 0800						
AB23	1-Hour Max. (Cm) Date Time (MST)	.46 11/12/78 1200	.18 12/30/78 1000	.43 1/17/79 1900	.20 2/24/79 1000	.30 3/17/79 0500	.25 4/11/79 0800						
A820	24-Hour Max. (Cm) Date	1.83 11/11/78	.81 12/01/78	.63 1/17/79	.79 2/22/79	1.02 3/22/79	1.47 4/11/79						
AB23	24-Hour Date	1.83 11/12/78	.28 12/30/78	.61 1/17/79	.56 2/22/79	.79 3/22/79	1.09 4/11/79						
AB20	Total (Cm)	4.83	4.67	2.49	2.29	4.44	3.17						
A823	Total (Cm)	4.50	.91	2.72	1.57	3.84	2.97						

(1) The 1-hour max. for January at Station AB20 occurred 2 times: 1/15/78 @ 1900 and @2200

(2) The 1-hour max. for January at Station A823 occurred 5 times: 1/10/78 @ 1800; 1/15/78 @ 2000, 2100, and 2400; 1/16/78 @ 0100

(3) The 1-hour max. for February at Station AB20 occurred 5 times: 2/12/78 @ 1600; 2/18/78 @2200; 2/20/78 @ 0400; 2/27/78 @ 2100 and @ 2200

(4) The 1-hour max. for February at Station AB20 occurred 4 times: 2/22/79 @ 1100, 1200 and 1400; 2/23/79 @ 1000.

Table II B-38

DIRECT SOLAR RADIATION

STATION AB23

MONTH	TOTAL LANG. FOR MONTH UNMOD.	MOD.*	AVG. DAY-LIGHT HRS/DAY	DAYLIGHT HRS PER MONTH	UPTIME DAYLIGHT HRS/MO.	CORR. FACTOR = ⑤/⑥	AVG. LANG/DAY (MOD.)	DAILY TOTAL/DATE HIGHEST	LOWEST
①	②	③ = ② x ⑦	④	⑤	⑥	⑦	③/(Days Per Mo.)	⑨	⑩
11/74	4121	4256	10	300	291	1.031	141.9	225/11	1/3
12/74	1878	3500	10	310	167	1.856	112.9	164/9	0/7
01/75	4036	4396	10	310	284	1.092	141.8	266/1	22/28
02/75	6880	7305	11	308	291	1.058	260.9	416/24	100/15
03/75	7586	10076	12	372	280	1.329	325.0	479/19	142/9
04/75	10940	11325	13	390	375	1.040	377.5	550/25	65/7
05/75	14559	14559	14	434	434	1.000	496.6	706/26	94/28
06/75	13762	15667	15	450	395	1.139	522.2	737/26	166/18
07/75	16079	16659	15	465	447	1.040	537.4	687/6	227/16
08/75	15005	15870	14	434	409	1.061	511.9	665/3	324/13
09/75	11849	12324	13	390	375	1.040	410.8	545/6	180/11
10/75	10089	10114	12	372	372	1.000	326.3	446/1	28/31
11/75	4615	4670	10	300	297	1.010	155.7	279/1	11/28
12/75	3957	4007	10	310	307	1.010	129.3	207/18	13/25
01/76	6166	6176	10	310	310	1.000	199.2	303/29	85/5
02/76	8102	8102	11	308	308	1.000	279.4	393/22	59/6
03/76	11856	12046	12	372	365	1.019	388.6	567/30	133/25
04/76	11990	13225	13	390	355	1.099	440.8	656/28	187/17
05/76	14693	15198	14	434	421	1.031	490.3	732/16	224/6
06/76	18674	18689	15	450	450	1.000	623.0	741/21	227/22
07/76	17102	17292	15	465	460	1.011	557.8	720/4	229/5
08/76	15351	15961	14	434	417	1.041	514.9	665/5	193/1
09/76	11477	11477	13	390	390	1.000	382.6	558/2	155/24
10/76	10178	10178	12	372	372	1.000	328.3	440/7	143/26
11/76	6725	6725	10	300	299	1.003	224.9	307/1	75/13
12/76	5685	5685	10	310	310	1.000	183.4	242/1	73/5
01/77	6043	6043	10	310	309	1.003	194.9	376/25	54/5
02/77	7850	7850	11	308	308	1.000	280.4	409/27	92/22
03/77	10737	11059	12	372	360	1.033	356.7	523/27	110/17
04/77	12870	12870	13	390	390	1.000	429.0	598/10&24	90/19
05/77	16228	16390	14	434	431	1.007	528.7	717/18	209/14
06/77	18590	18590	15	450	450	1.000	619.7	744/19	381/7
07/77	14256	16124	15	465	420	1.107	520.1	731/10	269/4
08/77	13970	14249	14	434	424	1.024	459.6	674/1	172/17
09/77	11904	12380	13	390	375	1.040	412.7	568/2	121/28
10/77	9676	9870	12	372	365	1.019	318.4	667/2	89/31
11/77	5580	6026	10	300	279	1.075	200.9	323/1	36/19
12/77	1328	-	10	310	81	-	-	229/5	75/3
01/78	1147	-	10	310	98	-	-	249/13	67/18
02/78	4508	8250	11	308	168	1.833	294.6	404/18	90/3
03/78	954	-	12	372	22	-	-	101/30	67/31
04/78	-	-	13	390	-	-	-	-	-
05/78	7587	-	14	434	183	-	-	714/12	5/21
06/78	-	-	15	450	-	-	-	-	-
07/78	1835	-	15	465	55	-	-	646/30	366/29
08/78	16327	16441	14	434	431	1.007	530.4	663/3	234/14
09/78	12107	12627	13	390	374	1.043	420.9	483/22	126/18
10/78	9957	9957	12	372	372	1.000	321.2	442/3	40/22
11/78	5480	5480	10	300	300	1.000	182.7	296/2	40/11
12/78	4635	4686	9	279	276	1.011	151.2	255/13	53/17
1/79	4454	4472	9	279	278	1.004	144.3	297/23	43/6
2/79	7718	7718	11	308	308	1.000	275.6	395/25	88/22
3/79	9749	11621	11	341	286	1.192	374.9	535/24	182/27
4/79	10990	15716	13	390	273	1.43	523.9	664/20	258/12

* "Modified" by the ratio of total-daylight to uptime-daylight hrs/mo for cases where uptime ≥ 50% of total.

Table II B-39

BAROMETRIC PRESSURE, MILLIBARS (DAILY EXTREMA)

STA.	ITEMS	SEASONAL YEAR	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	ANN. MAX. AVG. MIN.
AB24	DAILY MAX.	1975						795	796	799	798	803	802	803	803(1)
AB23	" "	1975		795	794(1)	790	790	792	793	794	794	799	798	800	800
AB24	DAILY AVG.	1975						790(1)	791(1)	795	796	797	794	793(1)	
AB23	" "	1975		786	785	782(1)	782	786	778(1)	791	792	794	791	789	
AB24	DAILY MIN.	1975						776	781	792	792	792	782	772	772(1)
AB23	" "	1975		770	777	769	771	773	778	788	789	789	782	770	770
AB24	DAILY MAX.	1976	802	802	804	796	799	798	799	799	801	803	800	(3)	804
AB23	" "	1976	798	799	799	793	790	795	795	796	797	799	797	798	799
AB24	DAILY AVG.	1976	794	795	791	788	789	793(1)	793	796(1)	797	796	795	(3)	
AB23	" "	1976	791	791	788	785	786(1)	790(1)	790	792(1)	793	793	792	792	790
AB24	DAILY MIN.	1976	776	785	778	778	776	787	787	791	792	790	789	(3)	776
AB23	" "	1976	780	781	775	775	781	784(1)	784	789	787	787	786	777	775
AB23	DAILY MAX.	1977	798	797	797	793	796	795	795	797	796	(2)	(2)	(2)	798(1)
AB23	DAILY AVG.	1977	790	788	790	784	789	786	791	794	794	(2)	(2)	(2)	
AB23	DAILY MIN.	1977	779	773	774	771	775	776	786	789	789	(2)	(2)	(2)	771(1)
AB23	DAILY MAX.	1978	(2)	784(1)	788	787	771	771	795	793	796	792	792	792	787(1)
AB23	DAILY AVG.	1978	(2)	773(1)	775	777	764	764	789	787	789	785	786	783	
AB23	DAILY MIN.	1978	(2)	758(1)	760	765	757	753	782	773	776	770	776	773	768(1)
AB23	DAILY MAX.	1979	794	792	793	793	789								
AB23	DAILY AVG.	1979	781	781	783	783	782								
AB23	DAILY MIN.	1979	766	770	771	772	766								

(1) Partial Data Only

(2) Missing Data

(3) Station Inoperative

Table II B-40

METEOROLOGICAL SUMMARY: TEMPERATURE AT STATION AB20*

(10 Meter Level)

(1977-1978)

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Temperature, Hourly Maximum (°C)										29	27	23
Temperature, Hourly Minimum (°C)										2	-4	-6
Temperature, Hourly Average (°C)										17	14	9

(1978-1979)

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Temperature, Hourly Maximum (°C)	19	7	6	12	13	19						
Temperature, Hourly Minimum (°C)	-11	-27	-29	-23	-13	-9						
Temperature, Hourly Average (°C)	2	-6	-7	-1	3	7						

* Monitoring of Temperature at Station AB20 was initiated 7/6/78

Table II B-41

METEOROLOGICAL SUMMARY: TEMPERATURE AND RELATIVE HUMIDITY
STATION AB23
(10 Meter Height)

(1977-1978)

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Temperature, Hourly Maximum (^{o}C)	18	13	13	6	15	18	24	28	31	29	28	25
Temperature, Hourly Minimum (^{o}C)	-17	-8	-2	-15	-11	-5	-4	2	7	2	-3	-3
Temperature, Hourly Average (^{o}C)	3	4	7	-3	2	6	9	17	21	18	15	10
Relative Humidity, Hourly Maximum (%)	(1)	99	97	96	96	95	94	96	94	94	97	97
Relative Humidity Hourly Minimum (%)	(1)	10	32	25	20	14	13	12	9	9	8	12
Relative Humidity, Hourly Average (%)	(1)	65	74	71	66	53	49	42	38	38	45	44

(1978-1979)

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Temperature, Hourly Maximum (^{o}C)	18	5	3	11	9	18						
Temperature, Hourly Minimum (^{o}C)	-16	-23	-26	-17	-12	-10						
Temperature, Hourly Average (^{o}C)	1	-6	-8	-2	0	5						
Relative Humidity Hourly Maximum (%)	99	99	100	99	100	(2)						
Relative Humidity Hourly Minimum (%)	19	31	35	29	30							
Relative Humidity Hourly Average (%)	62	74	75	70	73							

(1) Missing data.

(2) < 75% data

Table II B-42

METEOROLOGICAL SUMMARY: TEMPERATURE AT STATION AD42*

(10 Meter Level)

(1977-1978)

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Temperature, Hourly Maximum (°C)				10	(1)	(1)	(1)	29	34	29	29	25
Temperature, Hourly Minimum (°C)				-11	(1)	(1)	(1)	-3	4	-1	-8	-9
Temperature, Hourly Average (°C)				-2	(1)	(1)	(1)	16	20	16	11	8

(1978-1979)

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Temperature, Hourly Maximum (°C)	16	1	2	(1)	(1)	16						
Temperature, Hourly Minimum (°C)	-17	-28	-32	(1)	(1)	-17						
Temperature, Hourly Average (°C)	3	-9	-9	(1)	(1)	5						

* Monitoring of temperature at Station AD42 was initiated on 2/1/78

(1) 50% or less data

Table II B-43

METEOROLOGICAL SUMMARY: TEMPERATURE AT STATION AD56*

(10 Meter Level)

(1977-1978)

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Temperature, Hourly Maximum (°C)				9	18	20	25	(RF)	(1)	31	31	(1)
Temperature, Hourly Minimum (°C)				-24	-21	-11	-7	(RF)	(1)	0	-10	(1)
Temperature, Hourly Average (°C)				-5	-1	4	6	(RF)	(1)	17	11	(1)

(1978-1979)

Item	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Temperature, Hourly Maximum (°C)	(RF)	(1)	(RF)	9	13	20						
Temperature, Hourly Minimum (°C)	(RF)	(1)	(RF)	-15	-19	-15						
Temperature, Hourly Average (°C)	(RF)	(1)	(RF)	-3	2	7						

* Monitoring of temperature at Station AD56 was initiated February 1978
(RF) Recorder Failure
(1) 50% or less data

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LOW ALTITUDE
METEOROLOGY

II B-2 LOW ALTITUDE METEOROLOGY

Low altitude meteorology tower data are obtained at 10m, 30m, and 60m, for wind direction and speed, relative humidity, and temperature. Barometric pressure and daytime solar radiation are obtained at ground level. Temperature differences are obtained between the 10m and 60m levels.

Basic low altitude meteorological data through April 1979 are contained in References 1-9 at the end of this section.

Table/Figure No.	Description	Page No.
	Direction-Only Wind Rose	
Figure II B-2	Direction-only wind roses for Station AB20 for periods (a) November 1977 - October 1978 and (b) November 1978 - April 1979.	II B-53
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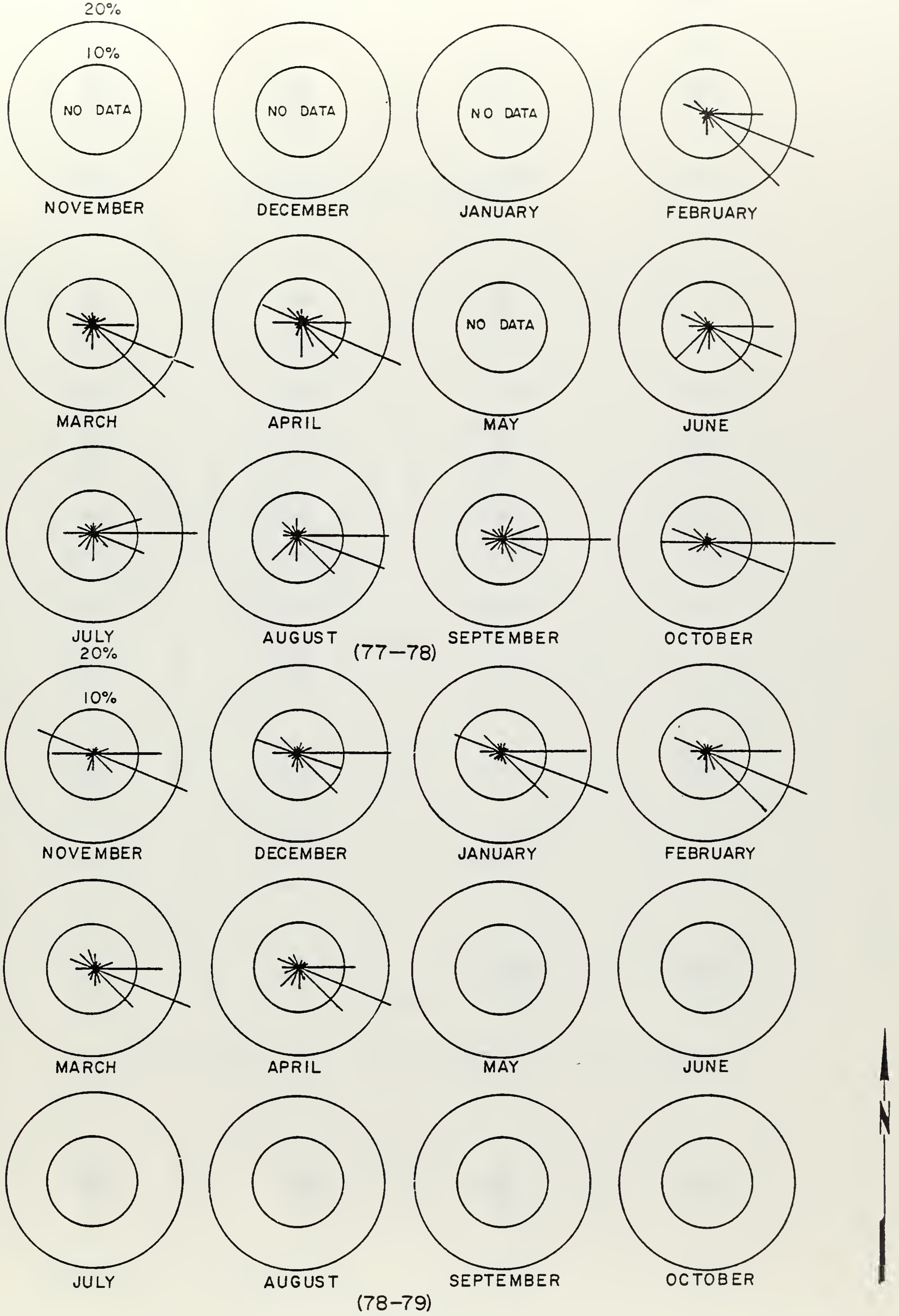
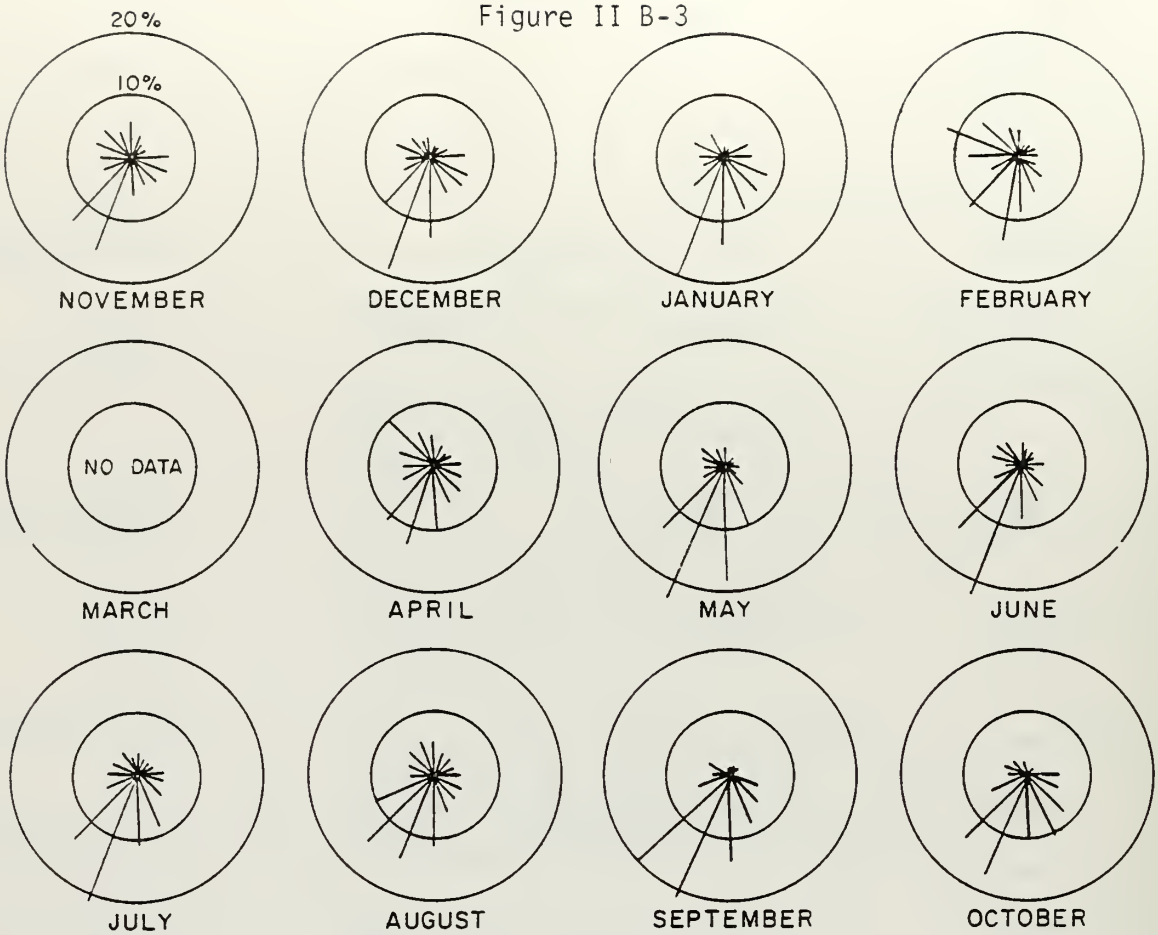
Figure II B-2

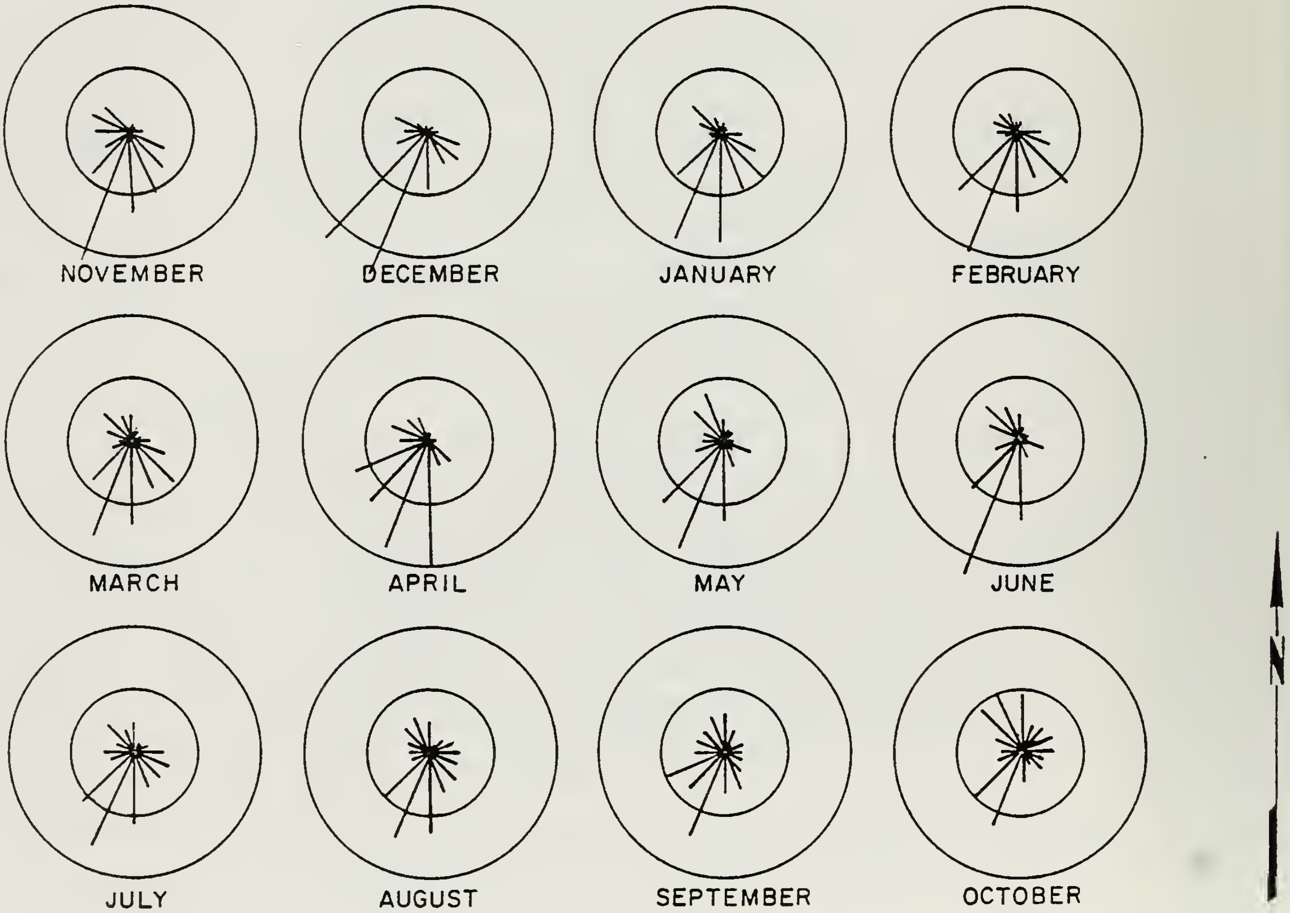


STATION AB20 10 M ELEVATION WIND ROSES

Figure II B-3



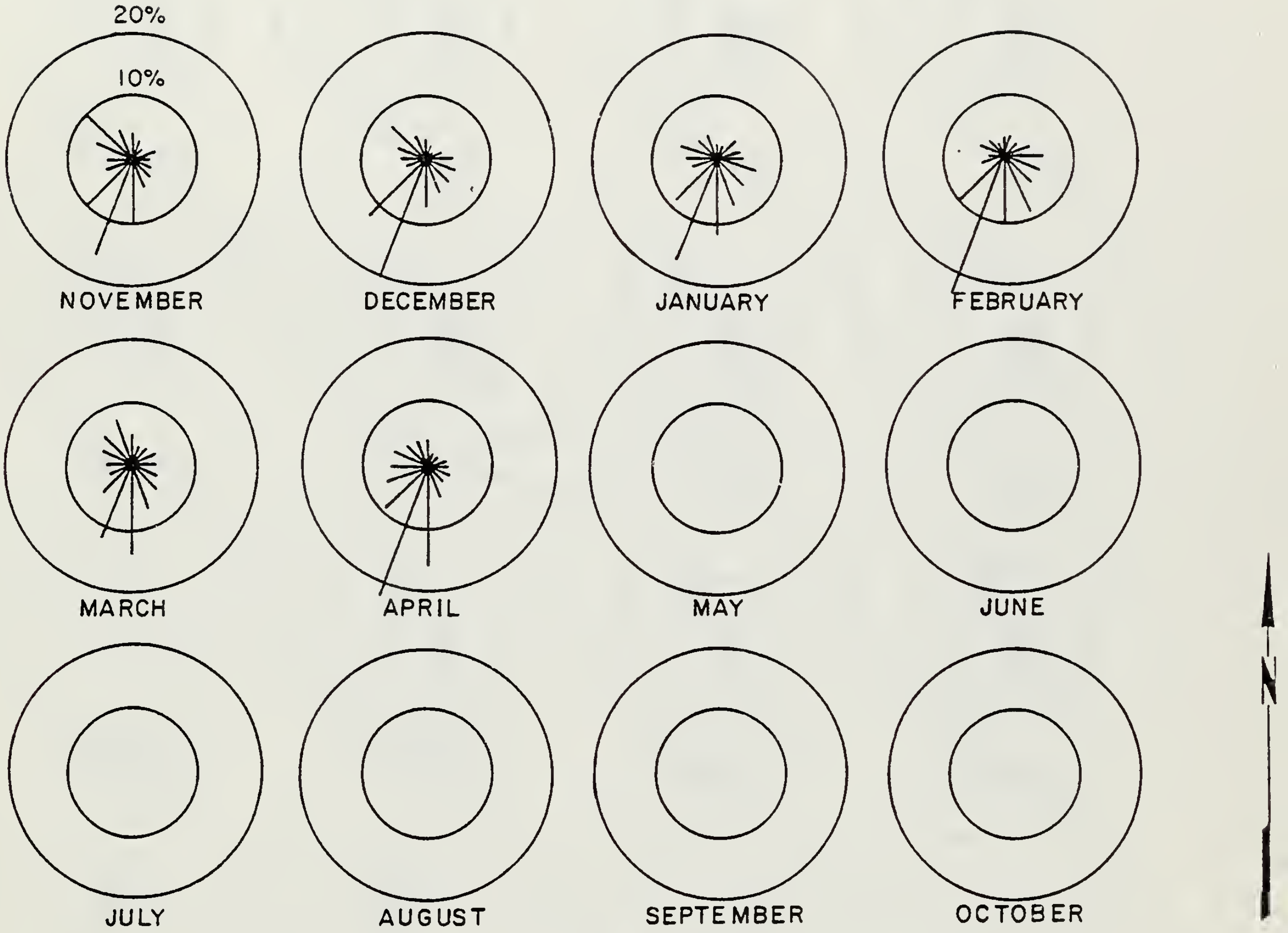
a.(76-77)



b.(77-78)

STATION AB23 10 M ELEVATION WIND ROSES

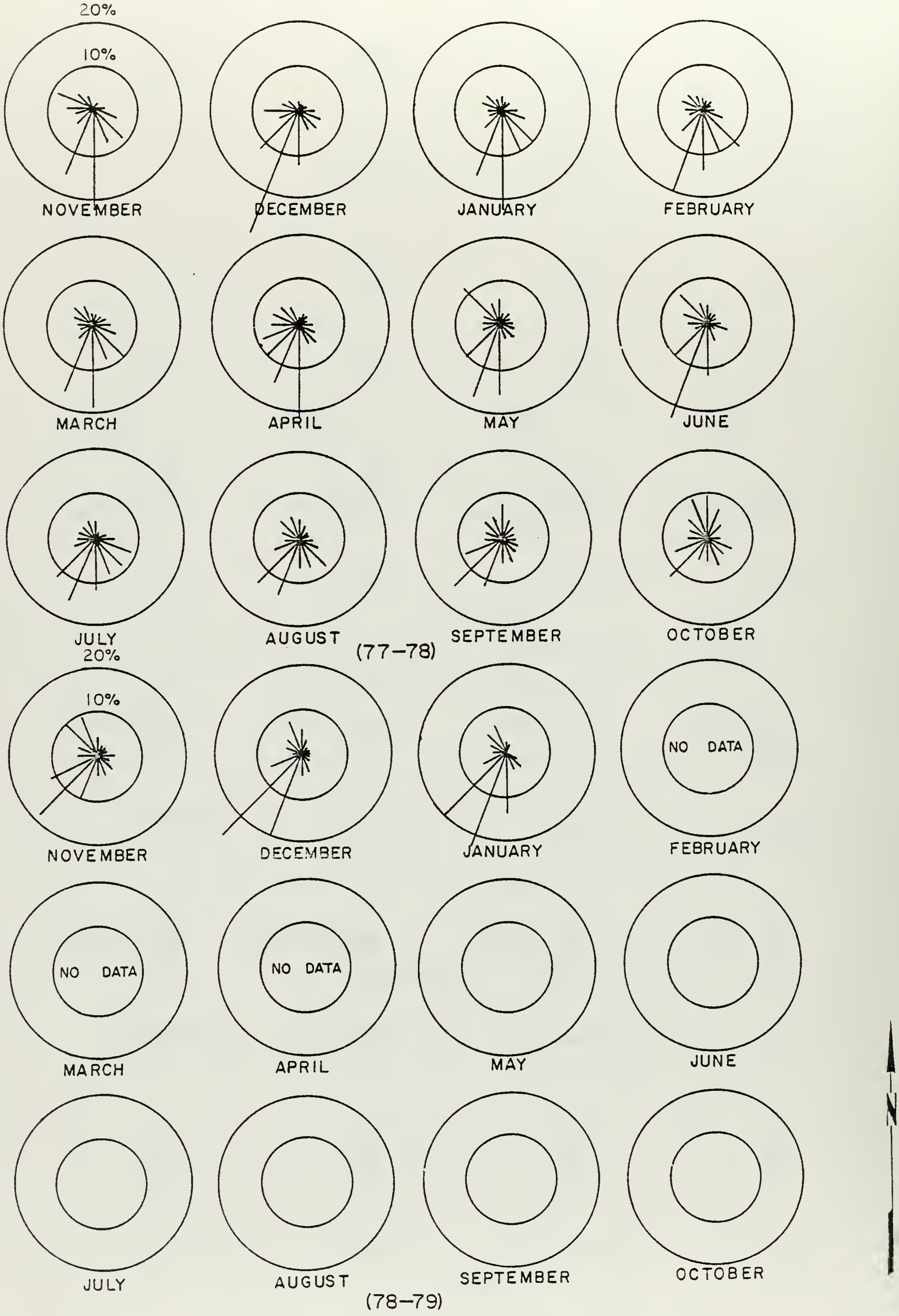
Figure II B-3 (Continued)



c.(78–79)

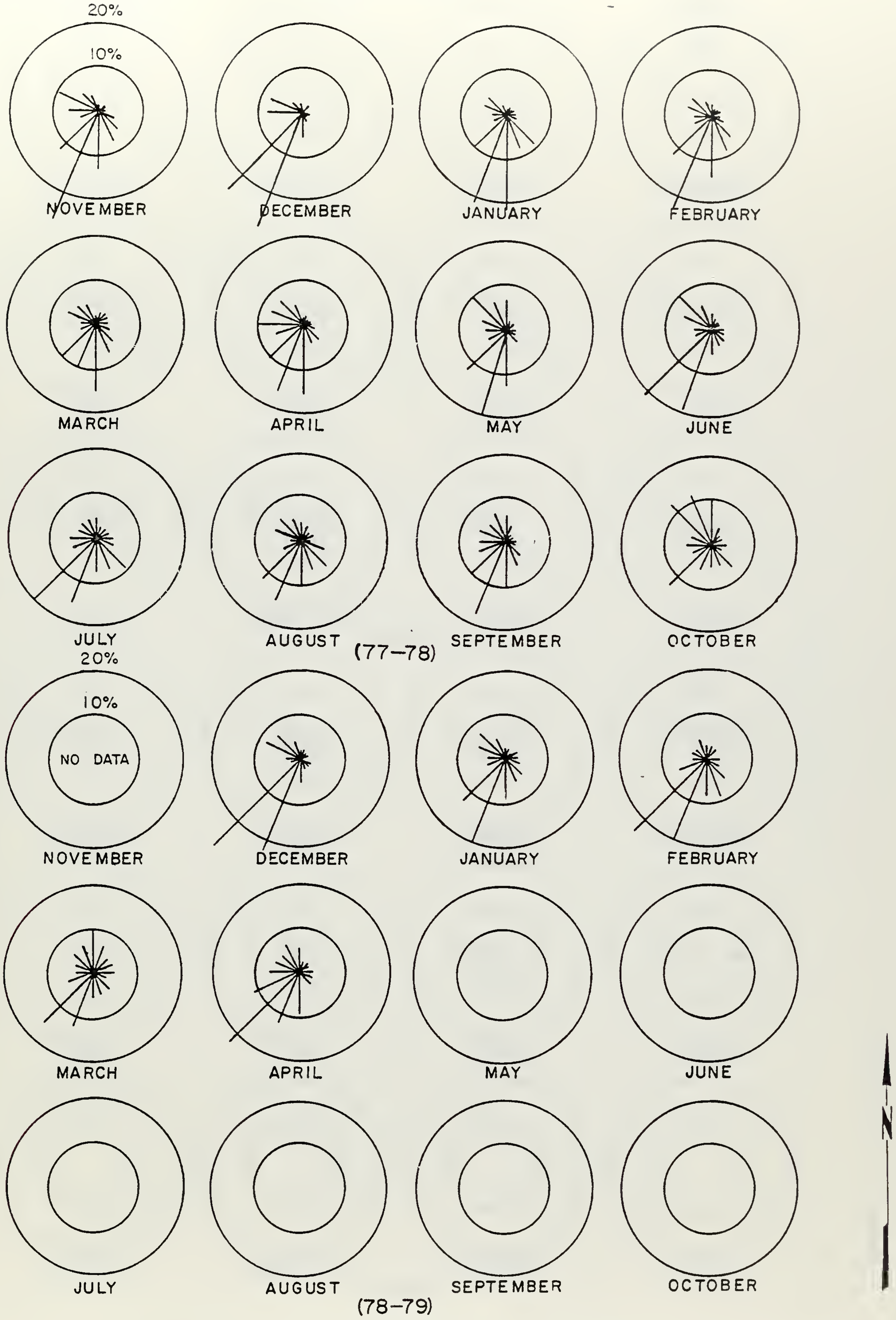
STATION AB23 10M ELEVATION WIND ROSES

Figure II B-4



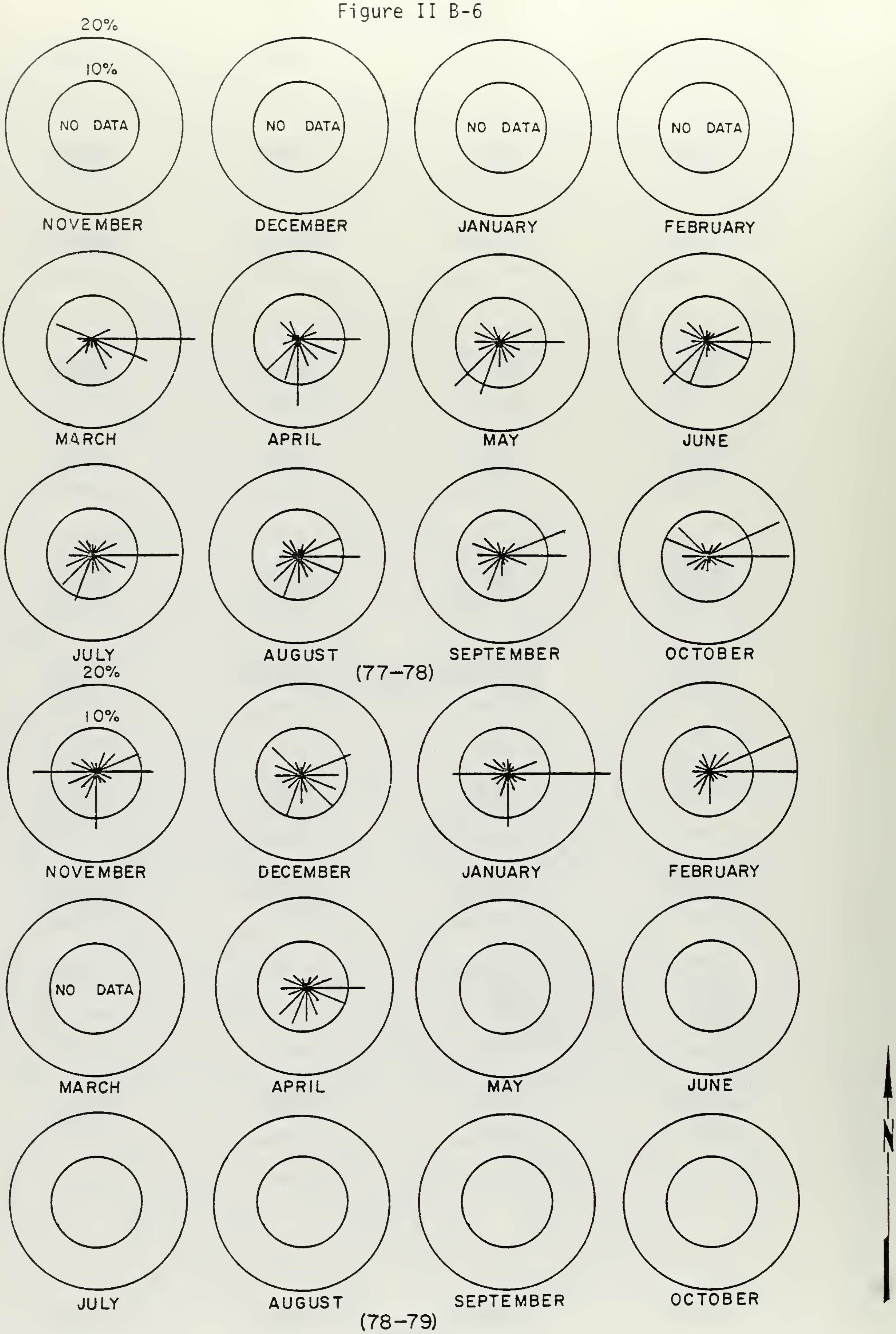
STATION AB23 30M ELEVATION WIND ROSES

Figure II B-5



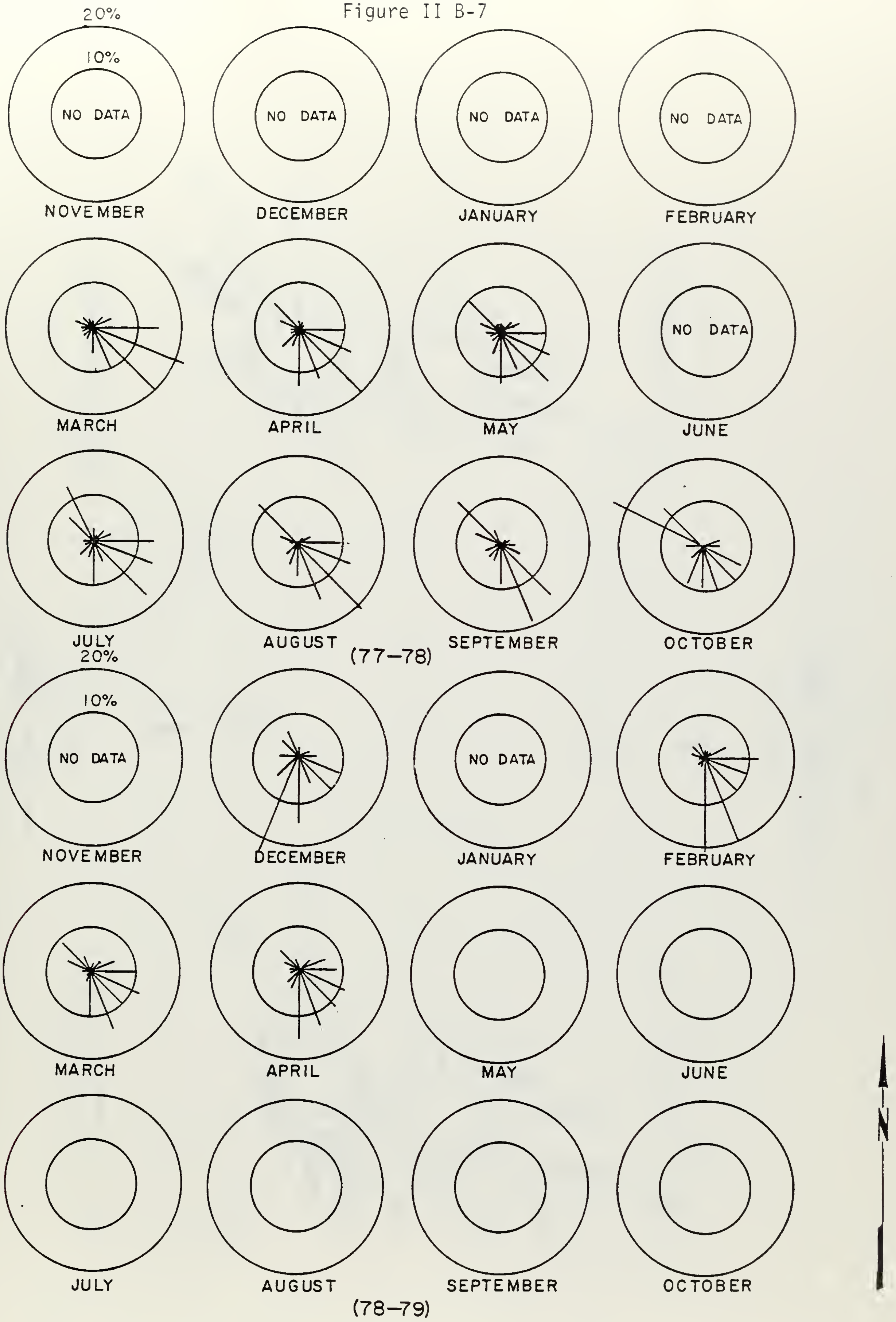
STATION AB23 60M ELEVATION WIND ROSES

Figure II B-6



STATION AD42 10M ELEVATION WIND ROSES

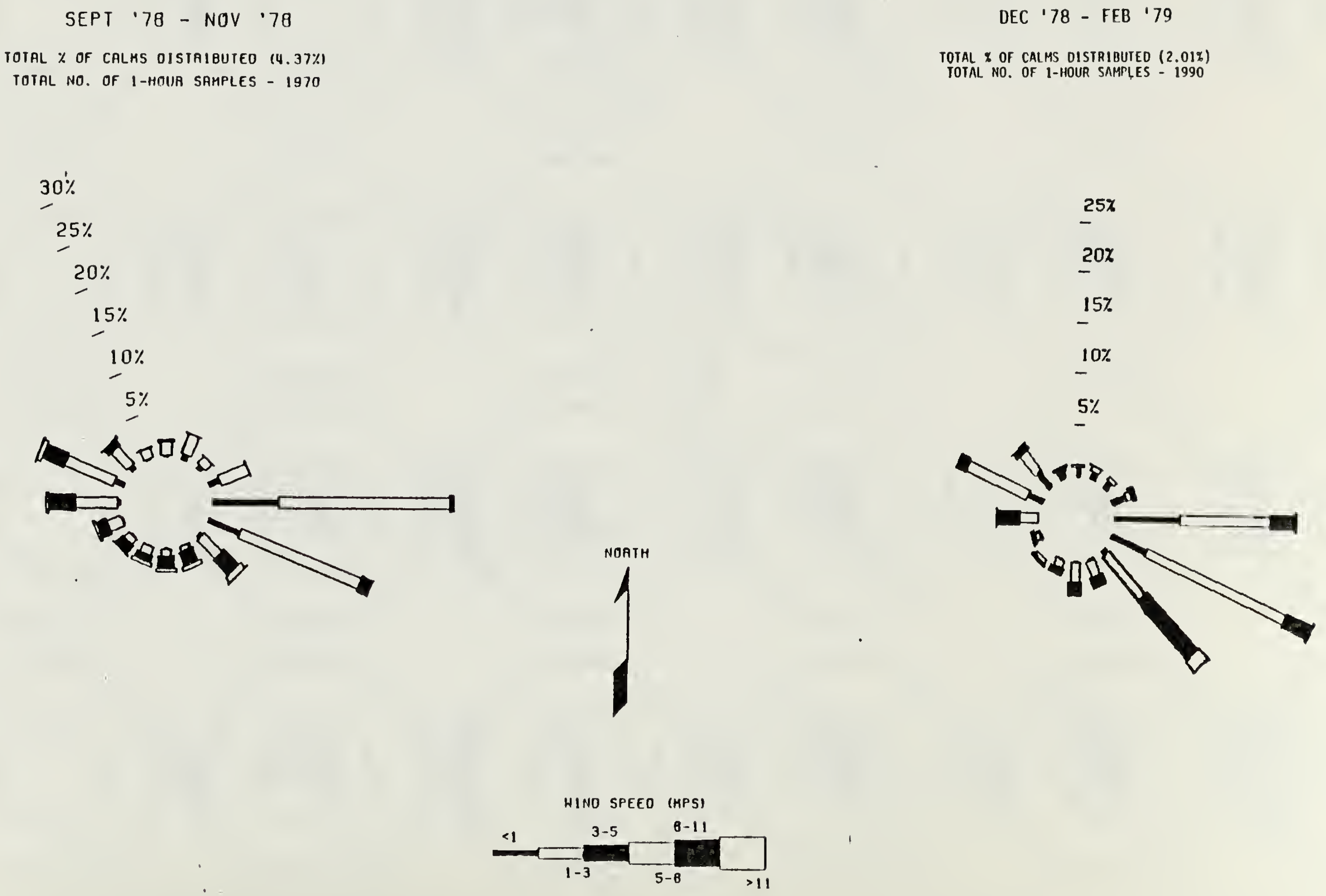
Figure II B-7



STATION AD56 10M ELEVATION WIND ROSES

Figure II B-8

AB20 QUARTERLY WIND ROSE @ 10M



SEPT '78 - NOV '78

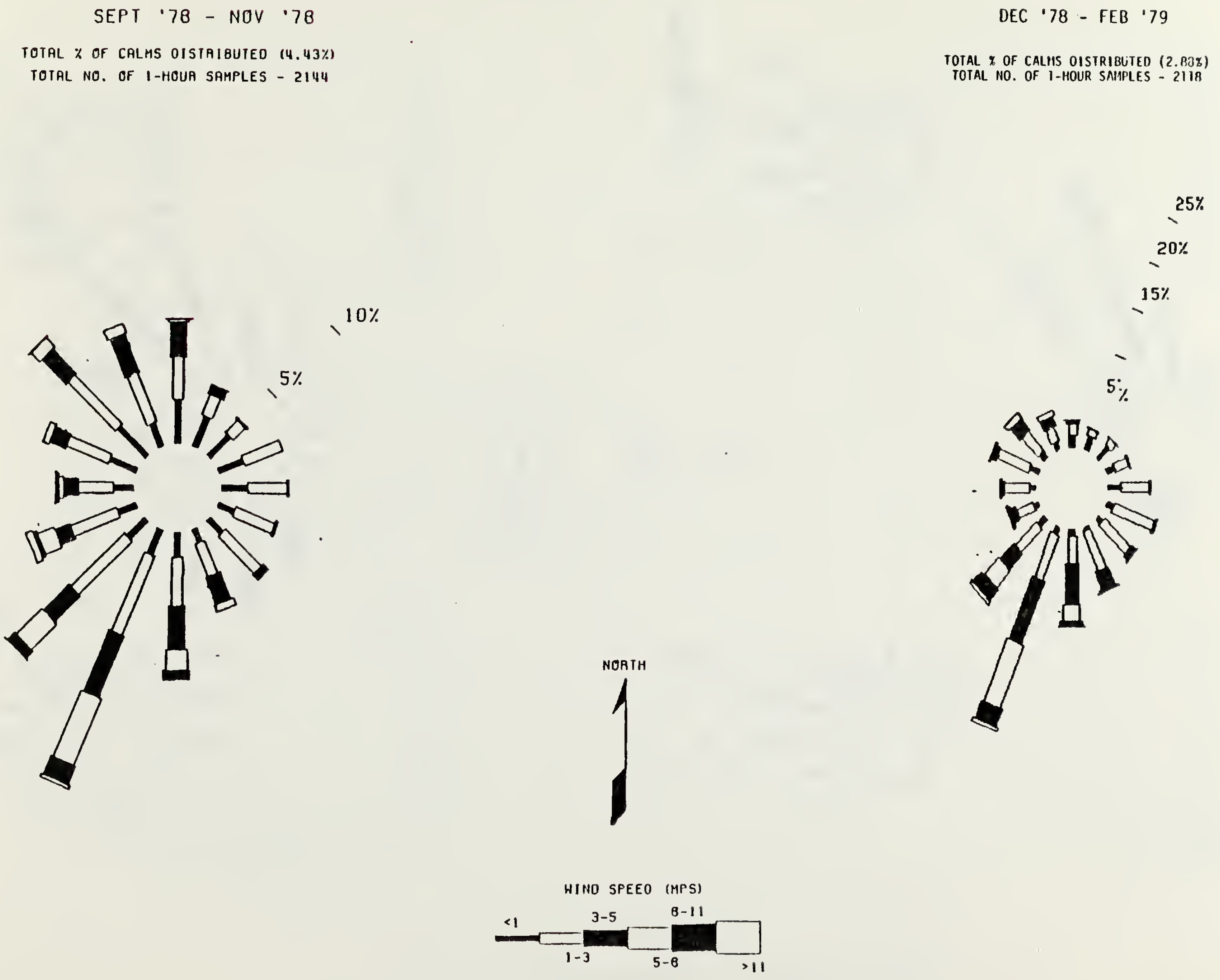
TOTAL % OF CALMS DISTRIBUTED (4.37%)
TOTAL NO. OF 1-HOUR SAMPLES - 1970

DEC '78 - FEB '79

TOTAL % OF CALMS DISTRIBUTED (2.01%)
TOTAL NO. OF 1-HOUR SAMPLES - 1990

Figure II B-9

AB23 QUARTERLY WIND ROSE @ 10M



SEPT '78 - NOV '78

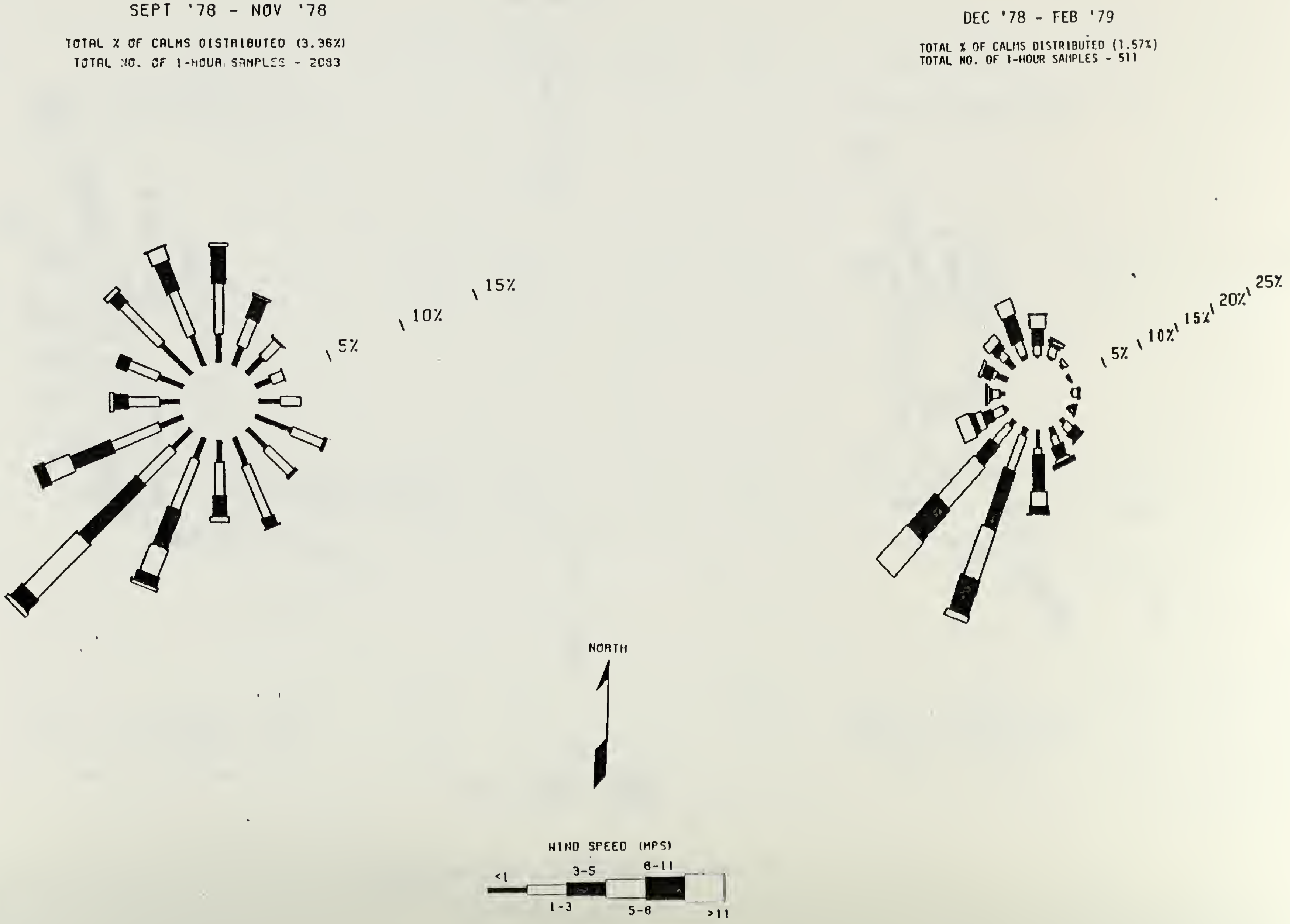
TOTAL % OF CALMS DISTRIBUTED (4.43%)
TOTAL NO. OF 1-HOUR SAMPLES - 2144

DEC '78 - FEB '79

TOTAL % OF CALMS DISTRIBUTED (2.83%)
TOTAL NO. OF 1-HOUR SAMPLES - 2118

Figure II B-10

AB23 QUARTERLY WIND ROSE @ 30M


SEPT '78 - NOV '78

TOTAL % OF CALMS DISTRIBUTED (3.36%)
TOTAL NO. OF 1-HOUR SAMPLES - 2083

DEC '78 - FEB '79

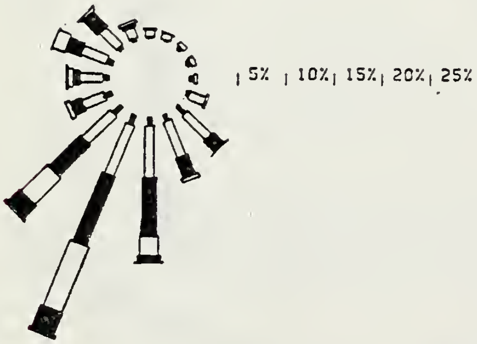
TOTAL % OF CALMS DISTRIBUTED (1.57%)
TOTAL NO. OF 1-HOUR SAMPLES - 511

Figure II B-11

AB23 QUARTERLY WIND ROSE @ 60M

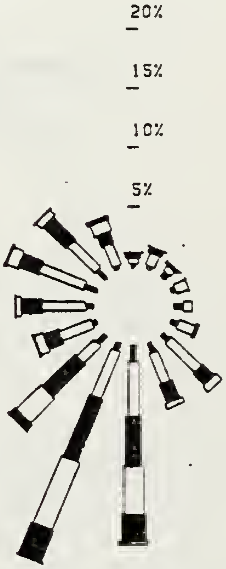
DEC '77 - FEB '78

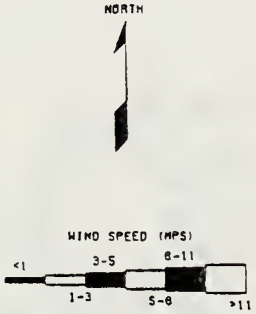
TOTAL % OF CALMS DISTRIBUTED (2.14%)
TOTAL NO. OF 1-HOUR SAMPLES - 1821



MAR '78 - APR '78

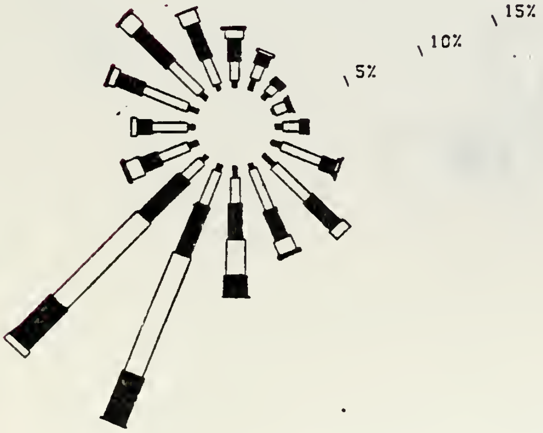
TOTAL % OF CALMS DISTRIBUTED (2.95%)
TOTAL NO. OF 1-HOUR SAMPLES - 1391





JUNE '78 - AUG '78

TOTAL % OF CALMS DISTRIBUTED (1.81%)
TOTAL NO. OF 1-HOUR SAMPLES - 2159



SEPT '78 - NOV '78

TOTAL % OF CALMS DISTRIBUTED (3.23%)
TOTAL NO. OF 1-HOUR SAMPLES - 1269

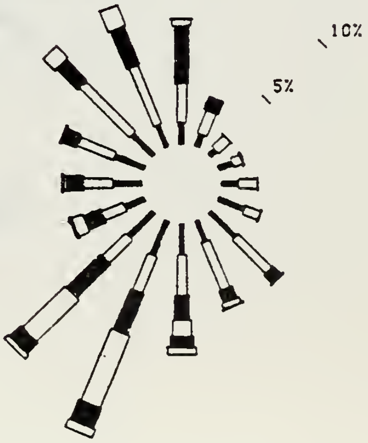


Figure II B-11 (Continued)

AB23 QUARTERLY WIND ROSE @ 60M
DEC '78 - FEB '79

TOTAL % OF CALMS DISTRIBUTED (1.54%)
TOTAL NO. OF 1-HOUR SAMPLES - 1624

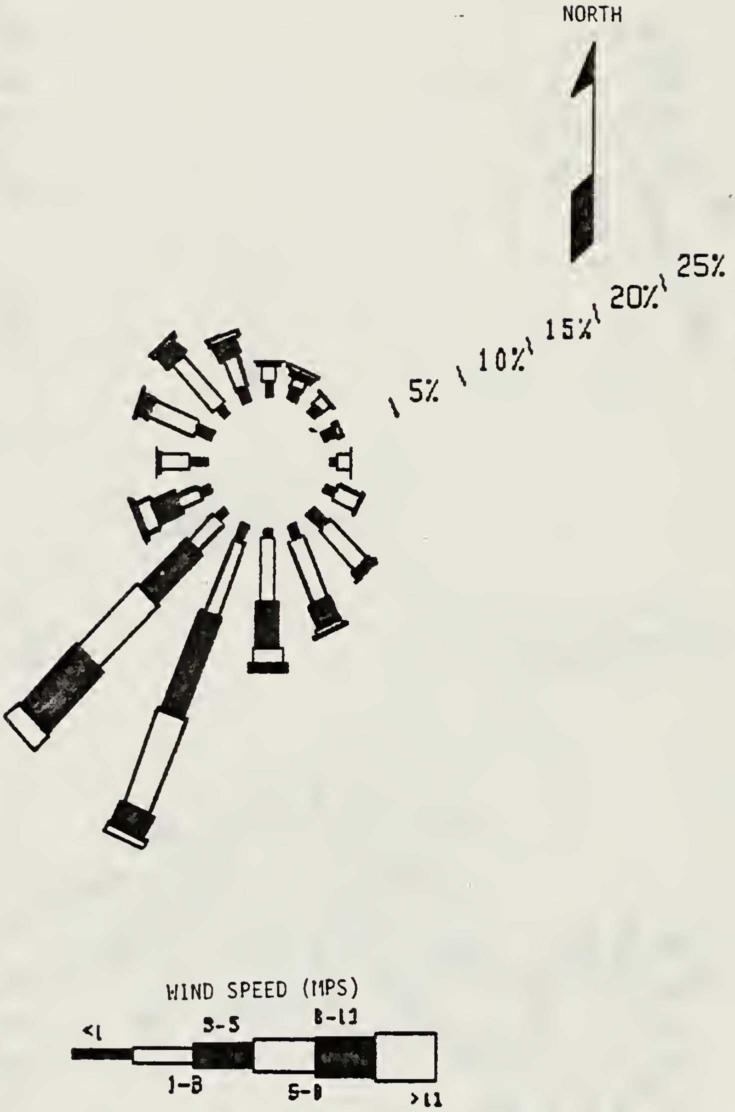
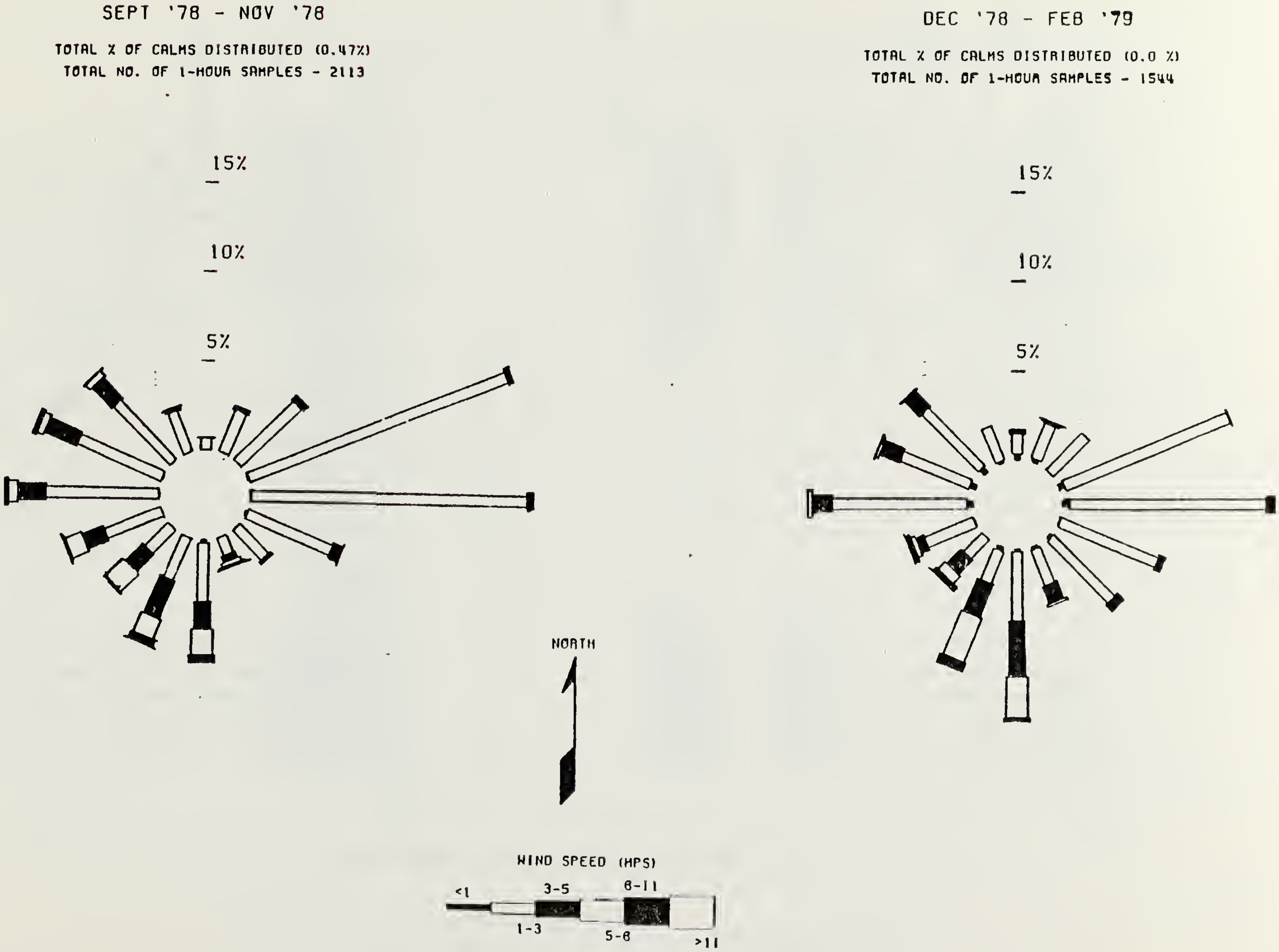


Figure II B-12

AD42 QUARTERLY WIND ROSE @ 10M


SEPT '78 - NOV '78

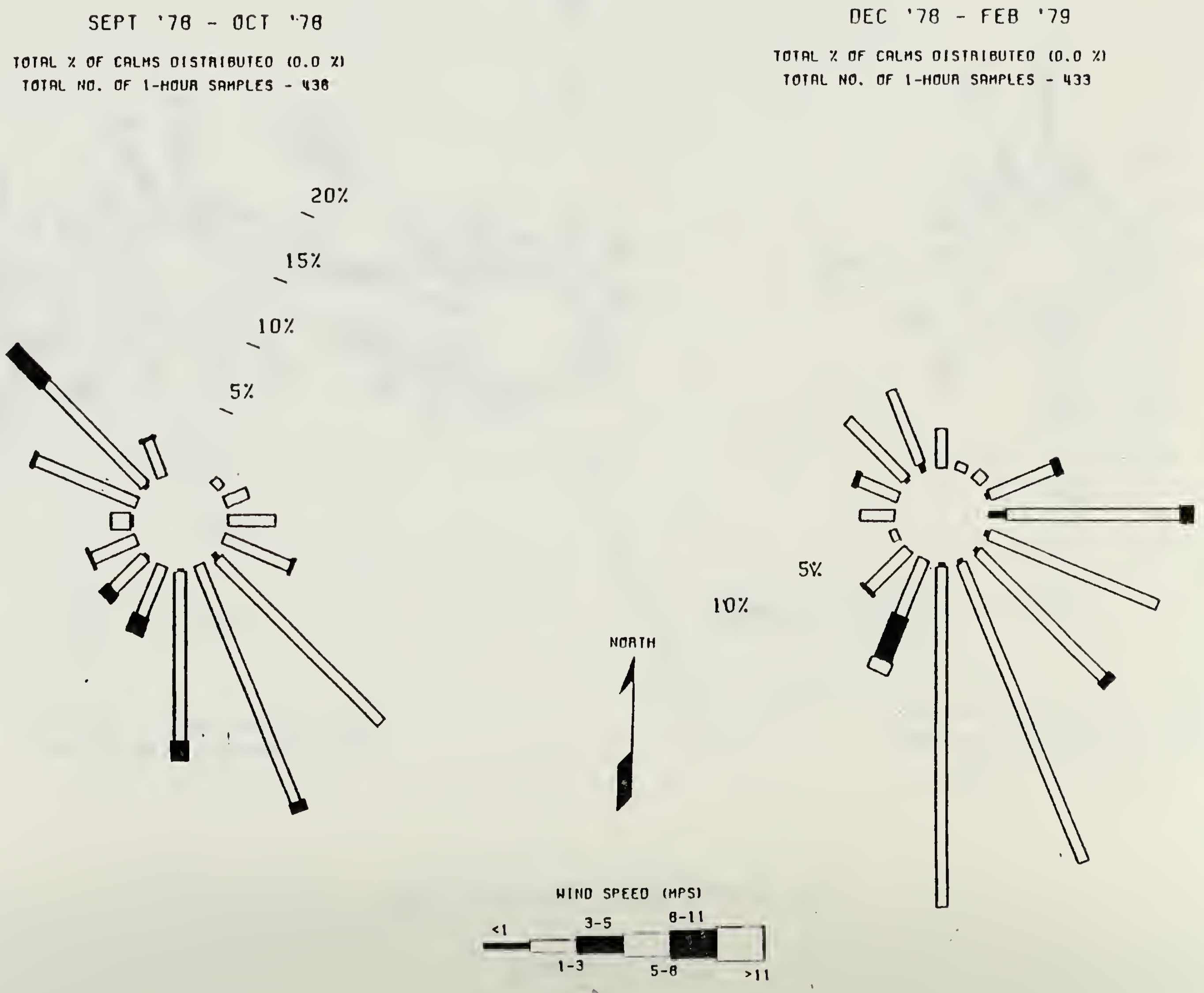
TOTAL % OF CALMS DISTRIBUTED (0.47%)
TOTAL NO. OF 1-HOUR SAMPLES - 2113

DEC '78 - FEB '79

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 1544

Figure II B-13

AD56 QUARTERLY WIND ROSE @ 10M



SEPT '78 - OCT '78

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 438

DEC '78 - FEB '79

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 433

Table II B-44

AVERAGE HOURLY STABILITY CLASSES (1976 - 1978)

SOURCE: Temperature differences between 60 meter and 10 meter on the Met Tower
(Adjusted for Wind Speed)

Month	HOUR																								Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Nov. 1976	E	D	D	E	D	E	E	E	D	A	A	B	B	B	B	B	B	D	D	D	E	E	E	E	D*
Dec.	E	E	E	E	E	E	E	E	E	C	B	B	B	B	B	B	B	D	D	D	E	E	E	E	D
Jan. 1977	D	D	E	D	E	D	D	E	D	C	B	B	B	B	B	B	B	C	D	D	D	D	D	D	C
Feb.	E	E	E	E	E	E	E	E	D	C	A	B	B	B	B	B	B	B	C	D	D	D	D	E	D
Mar.	D	D	D	D	D	D	D	C	B	B	C	C	C	C	C	C	C	B	C	D	D	D	D	D	C
Apr.	D	E	E	E	D	E	D	B	B	B	B	B	C	C	C	C	C	B	C	D	D	E	D	D	C
May *	D	D	D	D	D	D	D	B	C	C	D	C	C	D	D	D	D	D	C	D	D	D	D	D	C
June^1																									
July^1																									
Aug.^{1}																									
Sept.^{1}																									
Oct.^{1}																									
Nov.^{1}																									
Dec.^{1}																									
Jan. 1978	E	E	E	E	D	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
Feb. *	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
Mar. *	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
Apr.^{1}																									
May^1																									
June^1																									
July *	F	F	F	F	F	F	F	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	F	E
Aug. *	F	F	F	F	E	E	E	E	D	D	C	C	C	C	C	D	D	D	D	E	E	E	F	F	E
Sept. *	F	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
Oct.	F	F	F	F	F	F	F	F	F	D	D	D	D	D	D	D	D	E	E	F	F	F	F	F	E

AVERAGE HOURLY STABILITY CLASSES (1978 - 1979)

SOURCE: Temperature differences between 60 meter and 10 meter on the Met Tower
(Adjusted for Wind Speed)

Month	HOUR																								Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Nov. 1978	E	E	E	E	E	E	E	E	E	E	E	E	D	D	D	D	E	E	E	E	E	E	E	E	E
Dec.	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Jan. 1979	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Feb.	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Mar.	E	E	E	E	E	E	E	E	E	E	E	E	E	E	D	D	D	D	E	E	E	E	E	E	E
Apr.	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E

* Partial data only, less than 100% but more than 50%

1 Missing data

Key:
▨ Unstable Class
D Neutral
▒ Stable Class

Data beginning January 1978 are suspect at this time and will be investigated prior to the next semi-annual data report.

Table II B-45

METEOROLOGICAL SUMMARY: STABILITY CLASS FREQUENCIES (%)

Source: Met Tower[1]
(10m to 60m)

Pasquill-Gifford Stability Class	dT/dz Range[1] for this Stability Class (°C/100m)	1977		1978										
		Nov.[2]	Dec.[2]	Jan.	Feb.[2]	Mar.[2]	Apr.[3]	May[3]	June[2]	July[2]	Aug.[2]	Sept.[2]	Oct.	Annual Mean
A	<-1.9	0.3	0.0	0.7	0.3	0.3			0.0	0.0	0.2	0.0	0.0	0.2
B	-1.9 to -1.7	1.0	1.5	0.3	2.1	0.5			0.4	2.3	6.1	2.6	1.2	1.8
C	-1.7 to -1.5	2.1	1.5	4.4	2.9	1.9			0.8	5.9	5.7	2.6	2.4	3.0
D	-1.5 to -0.5	52.6	56.3	52.0	48.0	47.4			48.4	43.2	35.6	40.1	32.3	45.6
E	-0.5 to +1.5	36.8	25.6	28.2	32.9	24.8			29.8	19.5	22.5	23.5	19.7	26.3
F	>1.5	7.2	15.2	14.4	13.8	25.1			20.6	29.1	29.9	31.2	44.4	23.1
Total Percentage		100.0	100.0	100.0	100.0	100.0			100.0	100.0	100.0	100.0	100.0	100.0

Pasquill-Gifford Stability Class	dT/dz Range[1] for this Stability Class (°C/100m)	1978		1979										
		Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Annual Mean
A	<-1.9	0.0	0.0	0.0	0.0	0.1	0.0							
B	-1.9 to -1.7	0.0	0.2	0.0	0.0	0.0	0.1							
C	-1.7 to -1.5	0.1	0.0	0.0	0.0	0.0	2.2							
D	-1.5 to -0.5	20.9	26.8	16.4	19.4	24.4	46.3							
E	-0.5 to +1.5	53.6	51.5	60.5	54.4	57.6	29.1							
F	>1.5	25.4	21.5	23.1	26.2	17.9	22.3							
Total Percentage		100.0	100.0	100.0	100.0	100.0	100.0							

1 Adjusted for wind speed
2 Partial data
3 Instrument Malfunction

Data beginning January 1978 are suspect at this time and will be investigated prior to the next semi-annual data report.

UPPER AIR STUDIES

II B-3 UPPER AIR STUDIES

Upper air studies have been conducted in this time period beginning in October, 1978 for both the acoustic radar (Sta AB20) and pibal (Sta AB24). Both the acoustic radar and pibal yield mixing height (M) and inversion top height (I) as shown on Figure II B-14. The acoustic radar gives good data at low altitudes but previous pibal data should be consulted for mixing heights and inversion heights at high altitudes Pibal studies yield vertical (height) profiles of wind speed, direction and temperature. Results for both are reported in the references at the end of section II B. The following additional information is provided here:

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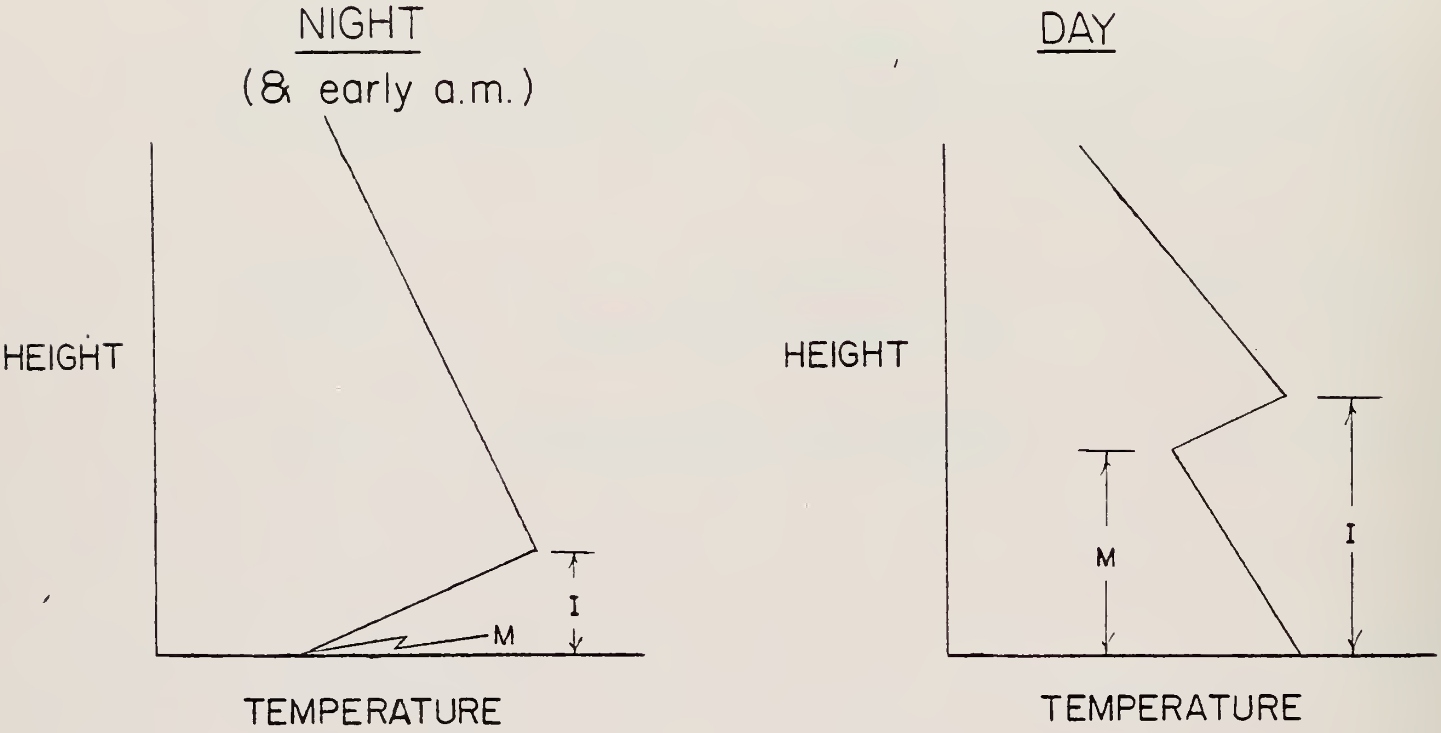
Table II B-46	Average Hourly Inversion Height by Month for Acoustic Radar	II B-71

FIG IIB-14 DEFINITIONS OF MIXING HEIGHT AND INVERSION HEIGHT



M = Mixing Height
I = Inversion (TOP) Height

Note: If h(stack) > I (either case) then
M = ∞

Table II B-46

AVERAGE HOURLY INVERSION (2) HEIGHT BY MONTH

(Acoustic Radar @ Station AB20

ITEM	MONTH	Beginning Clock Hour (MST)																								Average
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
I	November 1977 (1)	104	109	128	127	121	120	156	134	112	100	80							70	119	109	105	114	114	120	114
I	December 1977	181	197	198	186	186	181	191	205	195	179	131							158	188	188	188	202	208	197	187
I	January 1978	141	141	147	148	158	154	159	165	155	139	113							120	138	151	153	162	168	165	149
I	February 1978	151	163	154	154	150	151	158	152	142	119	105							72	113	159	172	162	171	162	140
I	March 1978	201	220	228	231	235	234	227	192	144	98									139	171	199	226	224	201	200
I	April 1978	198	229	231	214	204	211	198	169											99	112	156	192	184	195	180
I	May 1978	165	176	194	206	213	182	144	124												95	105	136	150	168	160
I	June 1978	315	318	305	289	301	292	234	225												100	204	267	298	298	248
I	July 1978	448	463	470	488	504	512	459	316	198											144	253	338	398	392	397
I	August 1978	356	374	376	393	386	402	370	265	211											168	261	329	355	347	328
I	September 1978	322	329	357	385	389	390	378	334	215										103	214	311	347	335	335	319
I	October 1978	314	330	333	332	345	342	315	291	225									178	212	273	300	304	307	307	292
I	November 1978	311	323	332	347	348	353	345	328	300	212								171	236	273	263	271	260	257	299
I	December 1978	289	303	294	284	278	281	283	292	281									182	236	290	292	251	258	257	268
I	January 1979	305	323	343	351	364	376	373	358	332	303	242							272	301	320	321	320	313	301	322
I	February 1979	363	348	359	361	375	371	368	362	348	304	230							210	319	348	351	354	346	350	339
I	March 1979	378	395	397	408	417	406	400	374	337	288									172	272	330	345	355	341	349
I	April 1979	347	379	374	377	377	370	362	320											129	219	290	327	337	341	326

I= Inversion (Top) Height (m.)

(1) Partial Data

(2) In midday the inversion breaks and rapidly goes off scale at the max. instrument height of 500 m. Numbers are shown only when inversion expectation exceeds 50%.

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VISIBILITY

FINAL REPORT
DOCUMENTATION OF VISIBILITY IN THE PICEANCE CREEK BASIN FOR RIO BLANCO OIL SHALE AND C-b SHALE OIL VENTURE

DAMES & MOORE
9836-002-16
January, 1979

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ABSTRACT

Visual range measurements were made by photographic photometry in the Piceance Creek Basin area during the Spring and Fall of 1978 by Dames & Moore for Rio Blanco Oil Shale Project and C-b Shale Oil Venture. This program is one of many environmental studies being conducted to satisfy the requirements of the Federal Oil Shale Lease Environmental Stipulations.

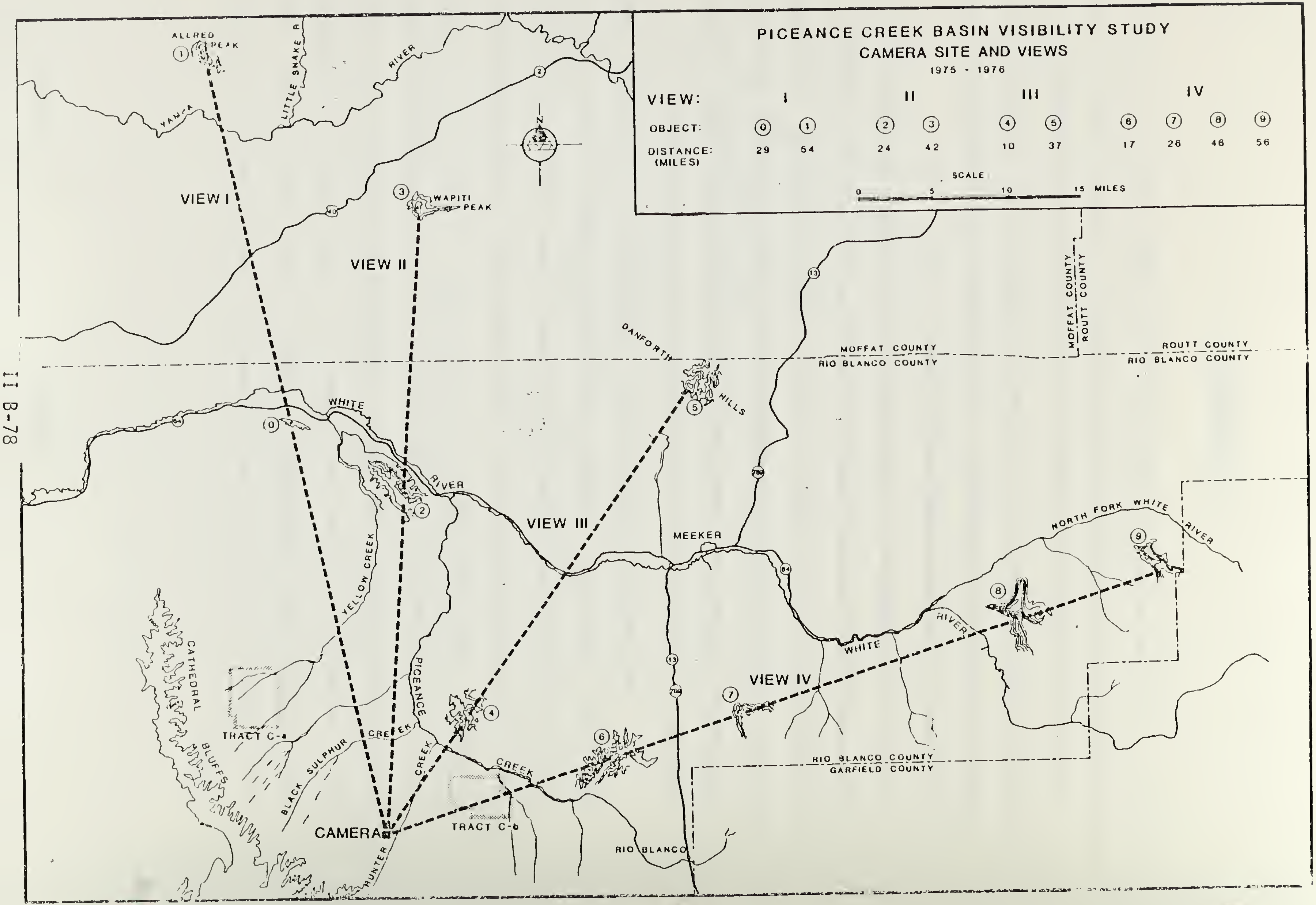
Visual ranges obtained during these periods were generally high; 95 percent of the measurements were greater than 43 miles, 50 percent were greater than 81 miles. Daily mean visual ranges exhibited large variations during the periods, ranging from 29 to 102 miles; variations in mean hourly visual ranges were small, however, and were less than 15 miles in each view. The generalized visibility (mean visual range) was found to be 79 miles for the year.

I. INTRODUCTION

Documentation of visibility in the Piceance Creek Basin area is a cooperative study conducted by Dames & Moore for the Rio Blanco Oil Shale Project and C-b Shale Oil Venture. This study is one of many environmental programs being conducted to satisfy the requirements of the Federal Oil Shale Lease Environmental Stipulations and represents the second year of data collection in the Piceance Creek Basin area.

The objectives of this program are to document the visibility in the area of the Piceance Creek Basin and identify trends or variations in visibility which may be evident during the monitoring program. The results of this program will provide visibility data against which past and future data may be compared and with which concurrent meteorological and air quality data may be incorporated for further evaluation and consideration.

The methods employed in the documentation of visibility during this study incorporate techniques identical to those utilized during the initial study conducted during 1975-76 (Dames & Moore, 1977) and will therefore not be discussed in detail in this report; only the frequency of monitoring has been modified from the original study. Instead of data collection every sixth day over a one-year period, data were collected every sixth day during two seasons: the Spring, represented by April and May, and the Fall, represented by October and November; all other aspects, including the site and views used (illustrated in Plate 1), the field procedures, data processing and the method of data presentation remain true to the original program.



PICEANCE CREEK BASIN VISIBILITY STUDY
CAMERA SITE AND VIEWS
1975 - 1976

VIEW:	I		II		III		IV			
OBJECT:	⓪	①	②	③	④	⑤	⑥	⑦	⑧	⑨
DISTANCE: (MILES)	29	54	24	42	10	37	17	26	46	56

Visibility measurements presented in this report were obtained during the months of April, May, October and November, 1978. Approximately 460 measurements were obtained and used in the statistical analysis of visual range during the year.

II. METHOD OF DATA PRESENTATION

During the 1978 monitoring period, visual range measurements were made during twenty scheduled days of photography over a four month period. Of a possible 560 visual range measurements, 458 were obtained for an 82 percent data recovery; one day occurred in which no measurements were obtained for the views.

Measurements of visual range during the year were occasionally hampered by passing rain or snowshowers which restricted visibility and made photography of the views difficult. Accumulations of snow on some objects being photographed required adjustments to be made in their albedo. The resulting albedo for these objects was estimated using the original albedo of the object modified by the relative contribution of the snow. The albedo values used for the original objects' surfaces and for the additional snow cover were based on the spectral reflectance of snow and various soil types listed in the Handbook of Geophysics and Space Environments (Valley, Shea L., 1975).

Results of the visual range measurements and statistical analyses are presented in this report on an expanding time basis as explained below:

A. Daily Basis - discussion of visual ranges obtained per day
   1) Mean - for composite of views

2) Hourly maximum and minimum - for composite of views.

3) Trends: discussion of variations in mean visual range - for each view.

B. Monthly Basis - discussion of visual ranges obtained per month

1) Mean - for composite of views

2) Hourly maximum and minimum - for composite of views

3) Distribution - for composite of views

C. Seasonal Basis - discussion of visual ranges obtained during the season

1) Mean - for each view
- for composite of views

2) Hourly maximum and minimum - for each view
- for composite of views

3) Five percentile: 95 percent of observations exceeded this value
- for each view
- for composite of views

4) Standard Deviation: measure of the dispersion of a frequency distribution
- for each view
- for composite of views

5) Distribution - for each view
- for composite of views

6) Trends: discussion of variations in mean hourly visual range - for each view
- for composite of views

D. Annual Basis -

1) Mean - for each view
   - for composite of views

2) Hourly maximum and minimum - for each view
   - for composite of views

3) Five Percentile - for each view
   - for composite of views

4. Standard Deviation - for each view
   - for composite of views

5. Distribution - for each view
   - for composite of views

6. Trends - for each view
   - for composite views

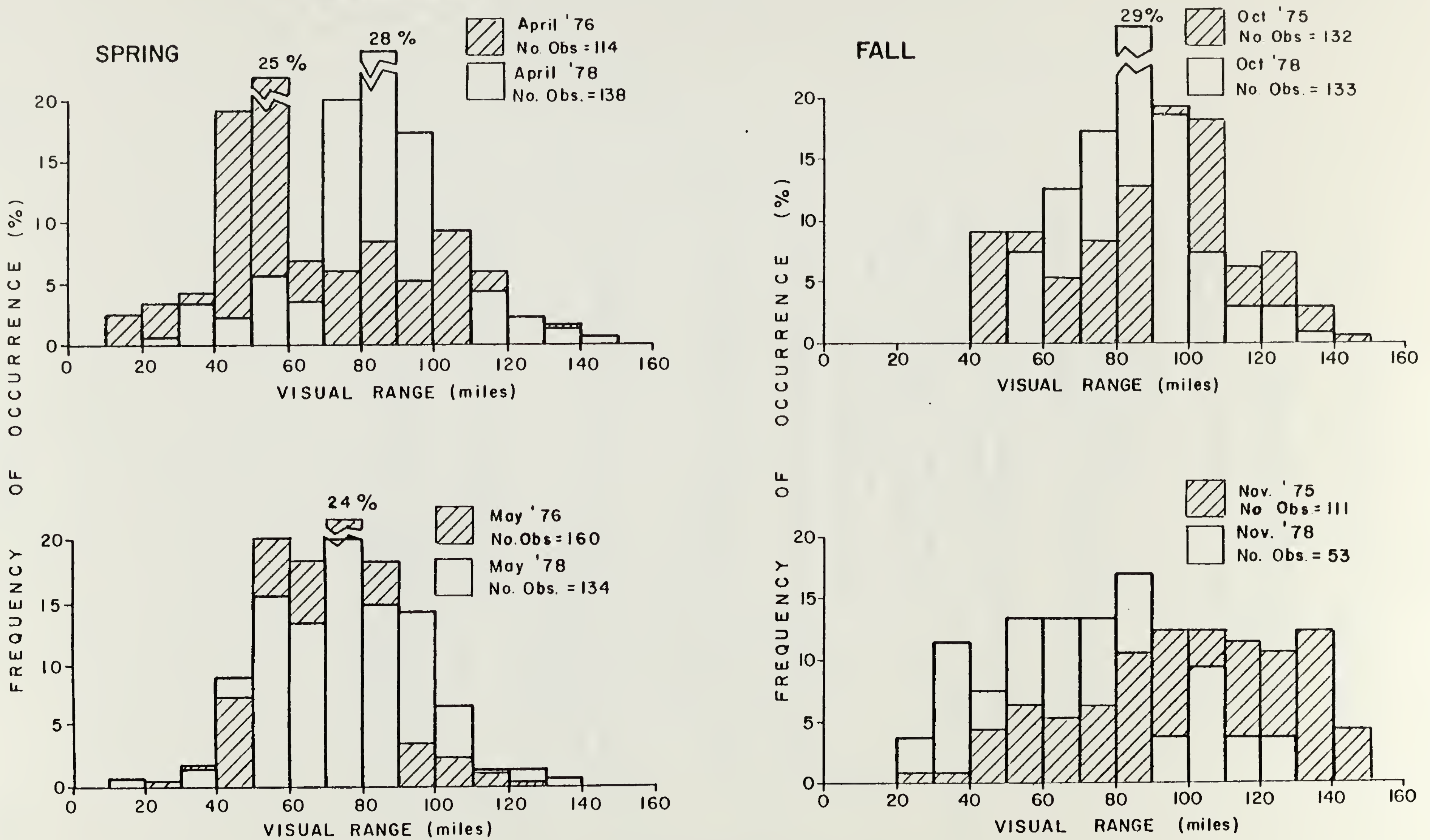


FIGURE 2
MONTHLY COMPOSITE DISTRIBUTION OF VISUAL RANGE
PICEANCE CREEK BASIN, COLORADO
SPRING and FALL, 1978

III. RESULTS AND CONCLUSIONS

A. EVALUATION OF VISUAL RANGE ON A DAILY BASIS

The computation of a daily mean visual range provides an indication of the prevailing visibility and conditions found in an area during the course of a day, unbiased by short-term or directional anomalies. Daily mean visual ranges in the Piceance Creek Basin were calculated for each day of monitoring and the results are presented in Table 1; the hourly maximum and minimum values are presented as well. No data is presented for November 28, 1978 due to inclement weather restricting the views during the entire day.

The daily mean visual ranges obtained during 1978 were generally high and occurred most frequently between 80 and 90 miles, although visual ranges over 100 miles and less than 30 miles were recorded. The hourly visual ranges used to compute the daily mean visual ranges for the Spring and Fall monitoring periods are included in Appendices A-1 and A-3, respectively.

Large fluctuations in the mean visual range of consecutive days of photography were common during 1978 with variations ranging from 2 to more than 40 miles. Between May 6 and May 12, 1978, for example, the daily mean visual range increased from 50 to 94 miles; the 6th of May was characterized by scattered snowshowers; May 12th by clear skies. Between April 18 and April 24, 1978, however, the mean visual range changed by only 2 miles, from 81 miles to 83 miles; both days were warm and sunny. The fluctuations exhibited in 1978 were generally smaller than during comparable periods in the 1975-1976 study. The average change in consecutive days of photography during the Spring and Fall, 1978 was 16 miles, compared with 28 miles during the same periods in 1975-1976. This decrease was most evident during the

TABLE 1

DAILY MEAN VISUAL RANGES (MILES)
PICEANCE CREEK BASIN, COLORADO
SPRING & FALL, 1978

	DATE	MEAN VISUAL RANGE	HOURLY MIN./MAX.
SPRING	April 6, 1978	102	72/142
	12	94	81/133
	18	81	72/112
	24	83	65/107
	30	54	21/84
	May 6, 1978	50	17/79
	12	94	71/114
	18	88	50/123
	24	66	44/94
	30	69	54/86
FALL	October 5, 1978	86	71/102
	11	80	55/123
	17	78	53/108
	23	100	79/130
	29	79	50/125
	November 4, 1978	90	58/121
	10	46	25/62
	16	29*	22/33
	22	55	32/83
	28	No Data	No Data

*Based on two hours of data.

Fall monitoring period when the average variation was 19 miles, compared with 39 miles in 1975; the average fluctuation during the Spring of 1978 was 15 miles, compared with 17 miles in 1976.

Daily mean visual ranges during the Spring of 1978 were higher than those recorded during the Spring of 1976, although extreme values were similar. During 1976, the maximum and minimum daily mean visual ranges recorded were 101 and 45 miles, respectively; during 1978 the respective values were 102 and 50 miles. Daily mean visual ranges during the Fall, however, were lower than those recorded during the Fall of 1975; mean values obtained during October and November, 1975 ranged from 63 to 130 miles, while the range in 1978 was from 29 to 100 miles. The hourly maximum and minimum values during the Fall also reflect this decrease. The single hourly maximum and minimum visual ranges during the comparable period in 1975 were 24 and 144 miles, respectively, compared with 22 and 130 miles during 1978.

The maximum daily mean visual range recorded in 1978 was 102 miles on April 6, 1978 and was reported in the Site Log as a "windy, blustery-type spring day". This contrasts with the minimum daily mean visual range of 29 miles recorded on November 16, 1978.

The fluctuations exhibited in the mean visual ranges, although large on occasion, were generally similar among the views; an increase or decrease in the mean visual range for an individual view was generally matched by similar responses in the remaining views. These fluctuations, shown in Figure 1, illustrate the continuity in response of the views to changing visibility restrictions during the Spring and Fall monitoring periods. The correlation between fluctuations in daily mean visual ranges

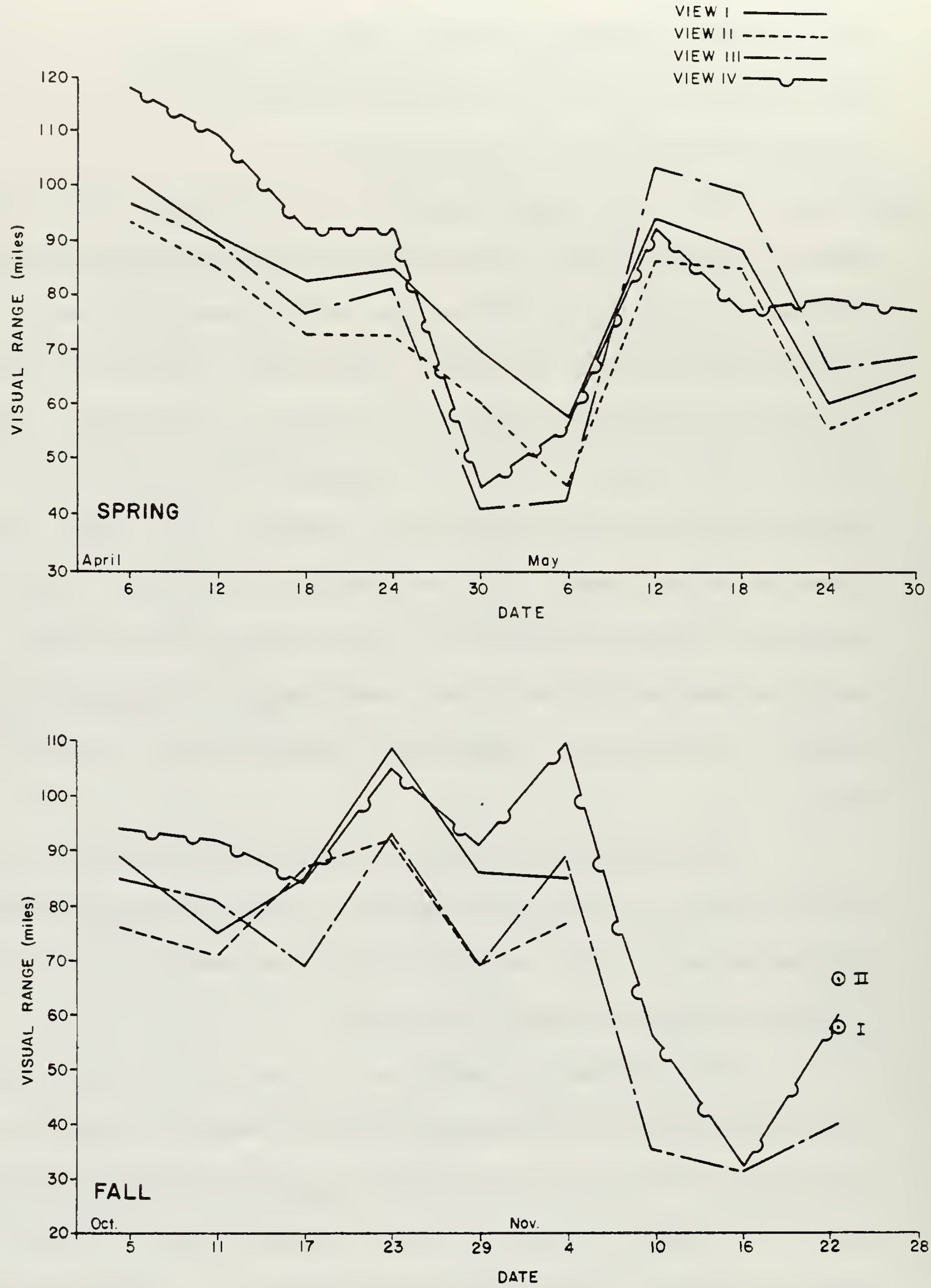


FIGURE 1
VARIATION IN DAILY MEAN VISUAL RANGE FOR EACH VIEW
PICEANCE CREEK BASIN, COLORADO
SPRING and FALL, 1978

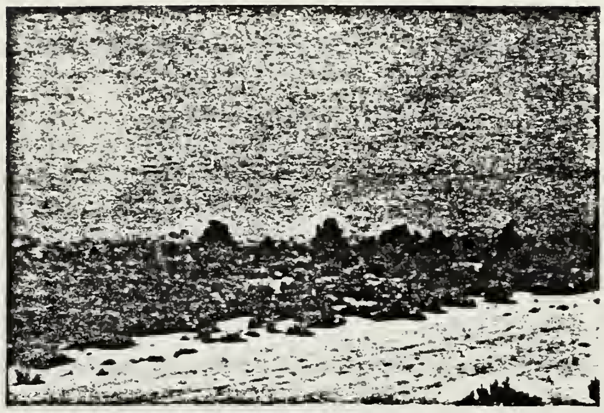
among the views implies that the influences on visibility were widespread and generally uniform in the way they affected visibility. Data are not shown for Views I and II on November 10 and 16th due to inclement weather restrictions preventing the measurement of visual ranges in these views.

Examples of visibility conditions encountered in the Piceance Creek Basin area are visually described on Plate 2 by color and black and white (B&W) photographs which depict the visual range during four general conditions: restricted, low, medium, and high visibility. Photographs from View I are used in Plate 2 to illustrate these various conditions although any of the other views could have been used for this purpose. Each set of photographs in Plate 2 was taken concurrently; the color photographs record the sky conditions and major restrictions to visibilty while the B&W photographs provide the data for analysis; the approximate area represented by the B&W photographs in the color photographs is outlined in black on the clear overlay.

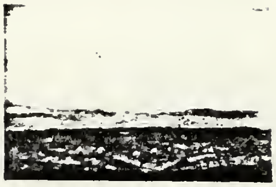
Restricted Visibility

Under restricted conditions, the photographic objects were not visible and visual range calculations could not be made, although a daily mean could be obtained if the objects became visible at a later hour. The first color photograph on Plate 2 was taken at 0830 MST, November 22, 1978 during a snowstorm which lasted until late morning. All views were obscured by the snow during the first two hours of photography and remarks in the Site Log indicate the severity of the storm:

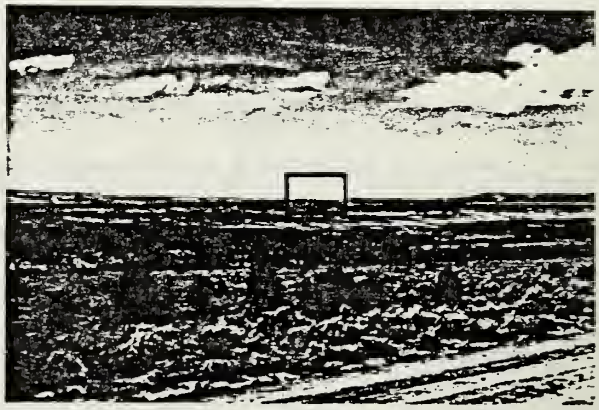
RESTRICTED



VISUAL RANGE = NO MEASUREMENT DAILY MEAN VR= 55 MILES

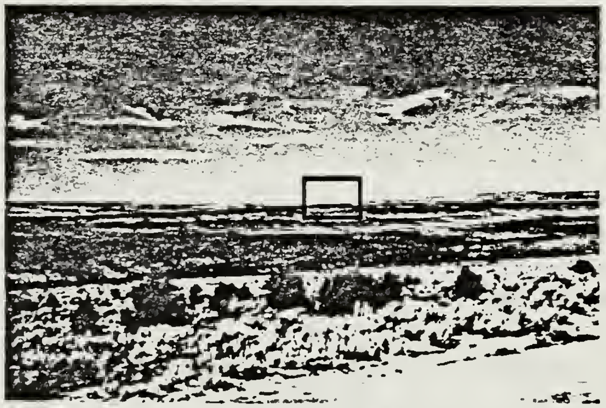


LOW



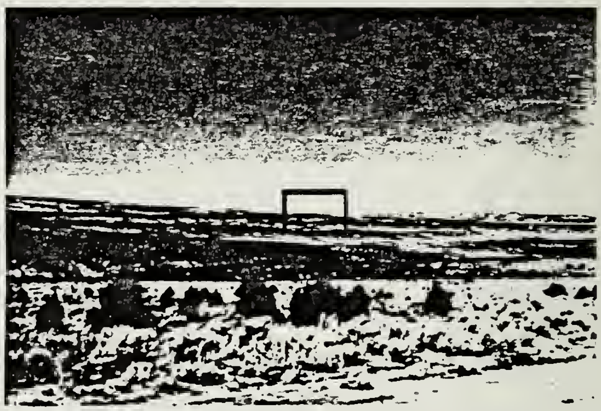
VISUAL RANGE = 57 MILES DAILY MEAN VR = 66 MILES

MEDIUM



VISUAL RANGE = 87 MILES DAILY MEAN VR = 79 MILES

HIGH



VISUAL RANGE = 114 MILES DAILY MEAN VR = 100 MILES

PLATE 2
VISIBILITY CONDITIONS ENCOUNTERED IN THE PICEANCE CREEK BASIN, COLORADO SPRING and FALL, 1978

DAMES & MOORE

0820 MST: "Arrived at site late ... slipped off road on way in ... snowing hard at present ... about 1 inch of new snow on ground ... looks like it will be another bad day."

0830 MST: "Conditions same, snowing hard ... visibility about one-half mile all directions ... slight wind from souteast."

0930 MST: "Still snowing, but is clearing ... some blue sky overhead."

This storm lasted until late morning with scattered snowshowers occurring into the afternoon. No visual range measurement was taken during the storm; however, by 1030 MST conditions began to improve and measurements were taken for some of the views. The remainder of the day saw little change from the late morning improvement; scattered snowshowers restricted the visibility in at least one of the views during the remaining hours. The daily mean visual range for this day, based on occasional measurements from available views, was 55 miles.

Major areal restrictions to visibility such as snowstorms which obscured all objects for an extended period of time were common during the Fall monitoring period. November 10, 16, 22, and 28 were all plagued by snowshowers or fog restricting the views for several consecutive hours. Of these four days only November 28th resulted in measurements not being taken due to inclement weather.

Instances of isolated restrictions were more frequent during the Spring monitoring period. Scattered snowshowers or rainshowers during the Spring occasionally obscured one or more of the objects in the views for short periods of time resulting in no visual range measurement being obtained for that particular view and hour. No attempts were made, however, to subjectively estimate the visual range for inclusion into the statistical summary for that period.

Low Visibility

Minor restrictions to visibility, such as haze and smoke, which occasionally required the use of a near object to determine the visual range, were often observed. Reports of haze in the Site Log usually indicated that it occurred more frequently during the early morning hours in Views I and II, although the remaining views were not exempt from its presence. Haze never restricted visibility to the extent that no measurements could be made using a near object for data collection however. Hourly comments recorded in the Site Log by the photographer provided additional information on the visibility conditions found during the photographic day. This information for the Spring and Fall periods are included in Appendices A-2 and A-4 respectively, and has been typed for presentation due to poor reproduction of the original sheets.

The effect of haze on the contrast and clarity of the objects in the Piceance Creek Basin area is illustrated in Plate 2 by the second set of photographs. These photographs were taken May 24, 1978 at 1300 MST and represent a visual range of 57 miles. Remarks in the Site Log indicate that the day began with "Only two Cl (clouds) in sky ... quite a bit of haze ... seem(s) heavy in the NW". As the day progressed the haze appeared to worsen in Views I and II. By 1300 MST the views were "fairly clear to the east, but its hazy to a point in the west where you can hardly see View I". By 1400 MST it was "real hazy (in) View I, View II (is) not quite so bad, light haze (in) View III, to almost clear (in) View IV". The daily mean visual range for this date was 66 miles.

Medium Visibility

Daily mean visual ranges in the Piceance Creek Basin area most frequently occurred between 80 and 90 miles during the year. The third set of photographs in Plate 2, taken October 29, 1978 at 1300 MST, represent visibility conditions in the early afternoon of a day with a mean visual range of 79 miles; the visual range illustrated is 87 miles.

Remarks in the Site Log indicate that this day was characterized as sunny and bright with slight haze in Views I and II, but very clear towards Views III and IV. The morning began with slight haze on some views and a moderate wind from the southeast. As the day progressed a few clouds began to form and the wind increased its intensity. By 1300 MST, the hour of the illustration, there was still some haze reported in the Site Log and the wind was strong and gusting from the southeast.

The haze reported in the Site Log may not be clearly evident in the color photogrpahs; however, the change in the contrast of the objects and the horizon sky in the B&W photographs from that illustrated for May 24, 1978 is readily apparent.

High Visibility

The visual range shown in the last set of photographs in Plate 2 is 114 miles and was recorded on October 23, 1978 at 1300 MST. The morning began sunny and clear in Views I and II, although low clouds obscured Views III and IV. As the day progressed the clouds dissipated and the views cleared. The daily mean visual range was 100 miles and the day was reported as "very nice ... sunny and cool."

The visual range illustrated in the last set of photographs does not represent the maximum value obtained during the study; however, it does illustrate the clarity and visibility conditions which can be expected to occur in the Piceance Creek Basin area more frequently than does the maximum value. The maximum hourly visual range obtained during the 1978 monitoring period was 142 miles; the maximum daily mean visual range recorded in the Piceance Creek Basin was 102 miles on April 6, 1978. Daily mean visual ranges of 100 miles or more and similar to that illustrated in Plate 2 occurred twice during the twenty days of photography.

B. EVALUATION OF VISUAL RANGE ON A MONTHLY BASIS

Monthly mean visual ranges were calculated from measurements obtained from all the views and hours during each month of monitoring. The monthly mean visual ranges obtained in the Piceance Creek Basin area during the Spring and Fall monitoring periods are listed in Table 2. Additionally, those visual range values obtained during comparable periods in 1975-76 have been included for review and comparison with the 1978 data.

Monthly mean visual ranges obtained during the four months of monitoring ranged from 70 miles in November to 84 miles in October; April and May had mean visual ranges of 83 and 74 miles, respectively. The monthly composite distribution of visual range for the four months of monitoring in 1978 and for those same months during the 1975-76 monitoring period are represented in Figure 2 and associated overlay. Values obtained during May and October, 1978 more closely reflect those values obtained during these same months during the 1975-76 session than do April and November, 1978. The monthly mean visual ranges for May and October are within 4 or 5 miles of

TABLE 2

MONTHLY COMPOSITE VISUAL RANGE SUMMARY (MILES)
PICEANCE CREEK BASIN, COLORADO
SPRING AND FALL, 1978

MONTH	MEAN[a]	MAXIMUM	MINIMUM	STANDARD DEVIATION
April '78	83	142	21	21.1
April '76	*67*	*138*	*14*	*27.7*
May '78	74	132	17	20.5
May '76	*70*	*124*	*27*	*16.7*
October '78	84	130	50	16.2
October '75	*89*	*144*	*44*	*24.6*
November '78[b]	70	121	22	26.4
November '75	*99*	*149*	*24*	*29.0*

a) Monthly means are based on approximately five days of photography per month.

b) Values based on one full day and three partial days of photography.

those obtained during the 1975-76 periods; the monthly means for April and November varied from the previous study by as much as 29 miles.

The distribution of visual ranges during April and November illustrate the large variation from those values obtained during the original monitoring period. During April, 1978 the distribution of hourly visual ranges was toward higher values than during April, 1976. Fifty percent of the observations during April, 1978 were greater than 85 miles, compared with 58 miles during April, 1976; the reverse is true, however, for November, 1978. The distribution of visual ranges during November, 1978 shifted to lower values than observed during November, 1975. Fifty percent of the visual ranges during November, 1978 were greater than 71 miles, compared with 102 miles in November, 1975.

Individual hourly maximum and minimum visual range measurements obtained in each month are also listed in Table 2. Individual hourly maximum and minimum visual ranges did not differ greatly from those obtained during the same periods in 1975-76. Minimum visual ranges varied from 17 to 50 miles during 1978, compared with 14 to 44 miles during those same months in the 1975-76 study. Maximum visual range measurements varied from 142 miles in April, 1978 to 121 miles in November, 1978; this compares with 149 miles and 124 miles during the same periods in 1975-76.

C. EVAULATION OF VISUAL RANGE ON A SEASONAL BASIS

Visual range measurements were made during two months in each of two of the four seasons in 1978 to quantify and characterize the visibility of the area. The selection of the Spring and Fall seasons for data collection was based on the results of the initial study during which the seasonal mean visual range was the minimum and maximum, respectively, during these seasons. Discussions in this section of the report deal with the comparison of visibilities encountered in those two seasons during 1978 and with those values obtained during the initial study of 1975-76.

The visual ranges obtained at Piceance Creek Basin during the two seasons in 1978 were generally high; the mean visual ranges were 79 miles during the Spring and 80 miles during the Fall. These and additional statistical descriptors are listed in Table 3 for each season and for the comparable seasons in 1975-76. The data for 1975-76, however, include three months per season, while the data for 1978 include two months per season, although the sampling frequencies were identical.

During the Spring, visual ranges were generally high; 95 percent of the visual range measurements were greater than 43 miles; 50 percent were greater than 81 miles. This compares with 39 and 67 miles during the Spring of 1976, respectively. Visual ranges during the Fall were also high, but not as high as during the Fall of 1975. The mean visual range during the Fall of 1978 was 80 miles, compared with 91 miles in 1975. Ninety-five percent of the visual range measurements during the Fall of 1978 were greater than 43 miles; 50 percent were greater than 82 miles. This compares with 45 and 92 miles during the Fall of 1975, respectively.

The hourly maximum and minimum visual ranges obtained during the Spring and Fall do not reflect the variation from the 1975-76 study noted in the mean visual ranges. Maximum and minimum values during 1978 were within 4 miles of those recorded during the same periods in 1975-76. The composite distribution of visual range in each season is illustrated in Figure 3.

The change in the mean visual range (generalized visibility) seen during the seasons was also apparent in the mean visual ranges of the four

TABLE 3

SEASONAL COMPOSITE VISUAL RANGE SUMMARY (MILES)
PICEANCE CREEK BASIN, COLORADO
SPRING AND FALL, 1978

SEASON	MEAN	HOURLY MAXIMUM	HOURLY MINIMUM	5 PERCENTILE	STANDARD DEVIATION
SPRING '78	79	142	17	43	21.2
Spring '76	*69*	*138*	*14*	*39*	*21.1*
Fall '78	80	130	22	43	20.5
Fall '75	*91*	*149*	*24*	*45*	*27.3*

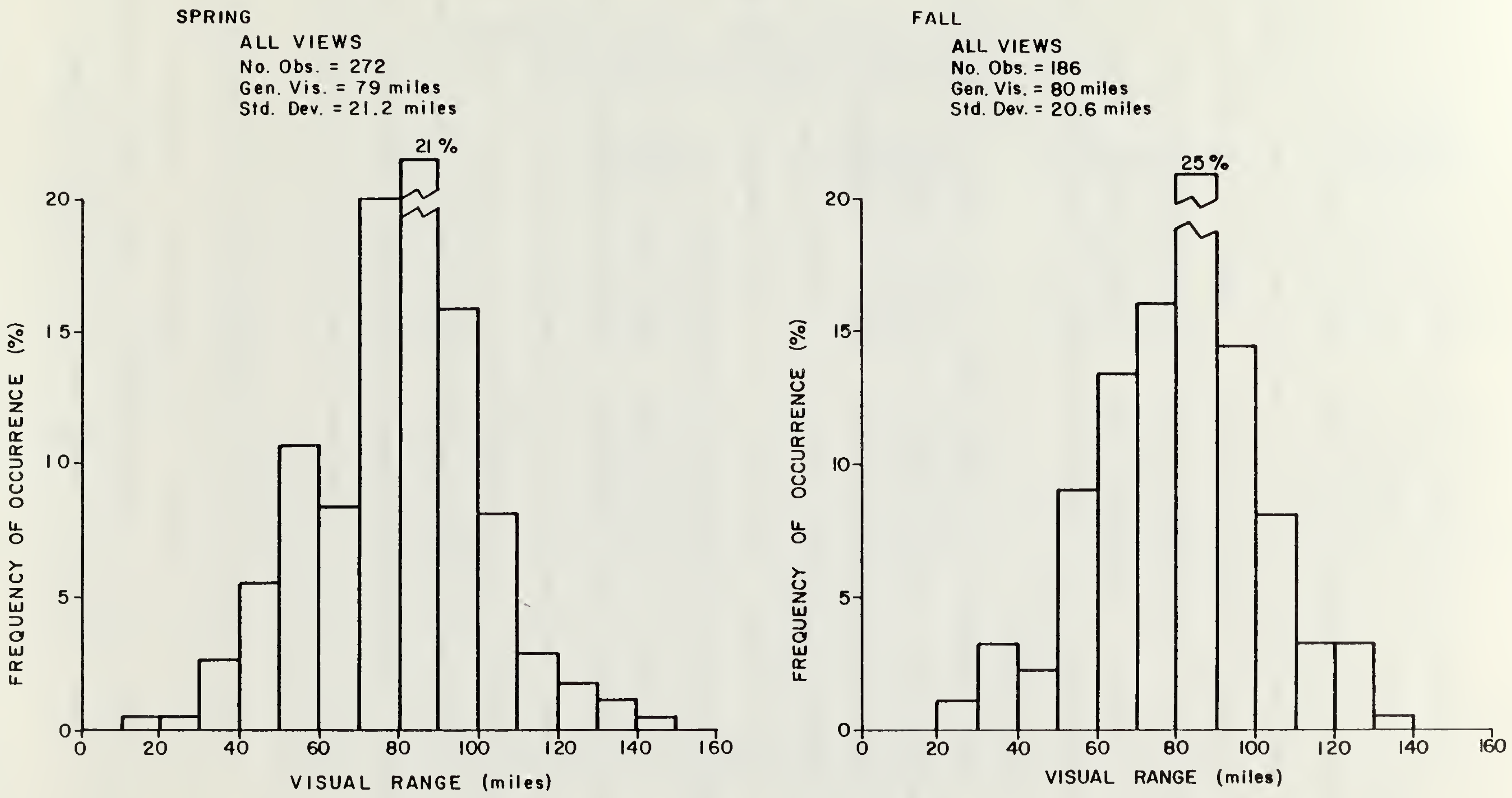


FIGURE 3
SEASONAL COMPOSITE DISTRIBUTION OF VISUAL RANGE
PICEANCE CREEK BASIN, COLORADO
SPRING and FALL, 1978

views. The decrease in the Fall, 1978 mean visual range from the Fall, 1975 value and the increase in the Spring, 1978 mean visual range from the Spring, 1976 value also appeared in all views; during no season did the mean visual range in an individual view vary from the general trend. The magnitude of changes varied, but not the direction. A summary of the mean visual ranges obtained in each view during the seasons is presented in Table 4 and illustrated in Figure 4. Included in Table 4 are the values obtained in the four views during each of the appropriate seasons in 1975-76; these values are listed in parenthesis.

The increase in the mean visual range noted in the Spring, 1978 data was generally uniform in the four views. The mean visual ranges in Views II and III increased by an amount equal to the increase of the generalized visibility during this period, i.e., 10 miles; Views I and IV increased by 7 and 11 miles, respectively. The hourly maximum and minimums also increased, but not as uniformly as the mean values.

The change in the mean visual range in the Fall, 1978 data from the Fall, 1975 data was less uniform than that exhibited during the Spring and appears to have resulted primarily from decreases in the mean visual ranges of Views III and IV. The decreases noted in the Fall were 6 and 1 miles for Views I and II, respectively, compared with 21 and 15 miles in Views III and IV . The hourly maximums and minimums did not reflect the overall decrease in visual ranges. All hourly maximum values for the four views decreased: however, the minimum values did not.

Another variation from the original study which appeared during the Fall of 1978 was the ordering of the magnitude of the mean visual ranges among the views. In every season during the 1975-76 study and the Spring of 1978, the lowest and second lowest mean visual ranges occurred in Views II

TABLE 4

SEASONAL VISUAL RANGE SUMMARY (MILES)
PICEANCE CREEK BASIN, COLORADO
SPRING AND FALL, 1978

	VIEW	MEAN	HOURLY MAXIMUM	HOURLY MINIMUM	5 PERCENTILE	STANDARD DEVIATION
Spring	I	81 *(74)**	126 *(118)*	51 *(39)*	53 *(50)*	16.5 *(18.9)*
	II	73 *(63)*	112 *(113)*	32 *(32)*	42 *(40)*	17.1 *(16.5)*
	III	77 *(67)*	132 *(118)*	17 *(14)*	35 *(27)*	23.7 *(22.3)*
	IV	84 *(73)*	142 *(138)*	35 *(27)*	45 *(38)*	24.8 *(24.5)*
Fall	I	87 *(93)*	130 *(149)*	58 *(37)*	54 *(49)*	16.5 *(27.8)*
	II	76 *(77)*	102 *(142)*	55 *(42)*	54 *(43)*	11.7 *(23.6)*
	III	71 *(92)*	103 *(146)*	22 *(24)*	31 *(46)*	21.9 *(27.4)*
	IV	86 *(101)*	125 *(148)*	31 *(48)*	44 *(52)*	24.5 *(25.8)*

* Parenthetical numbers are from Spring 1976.

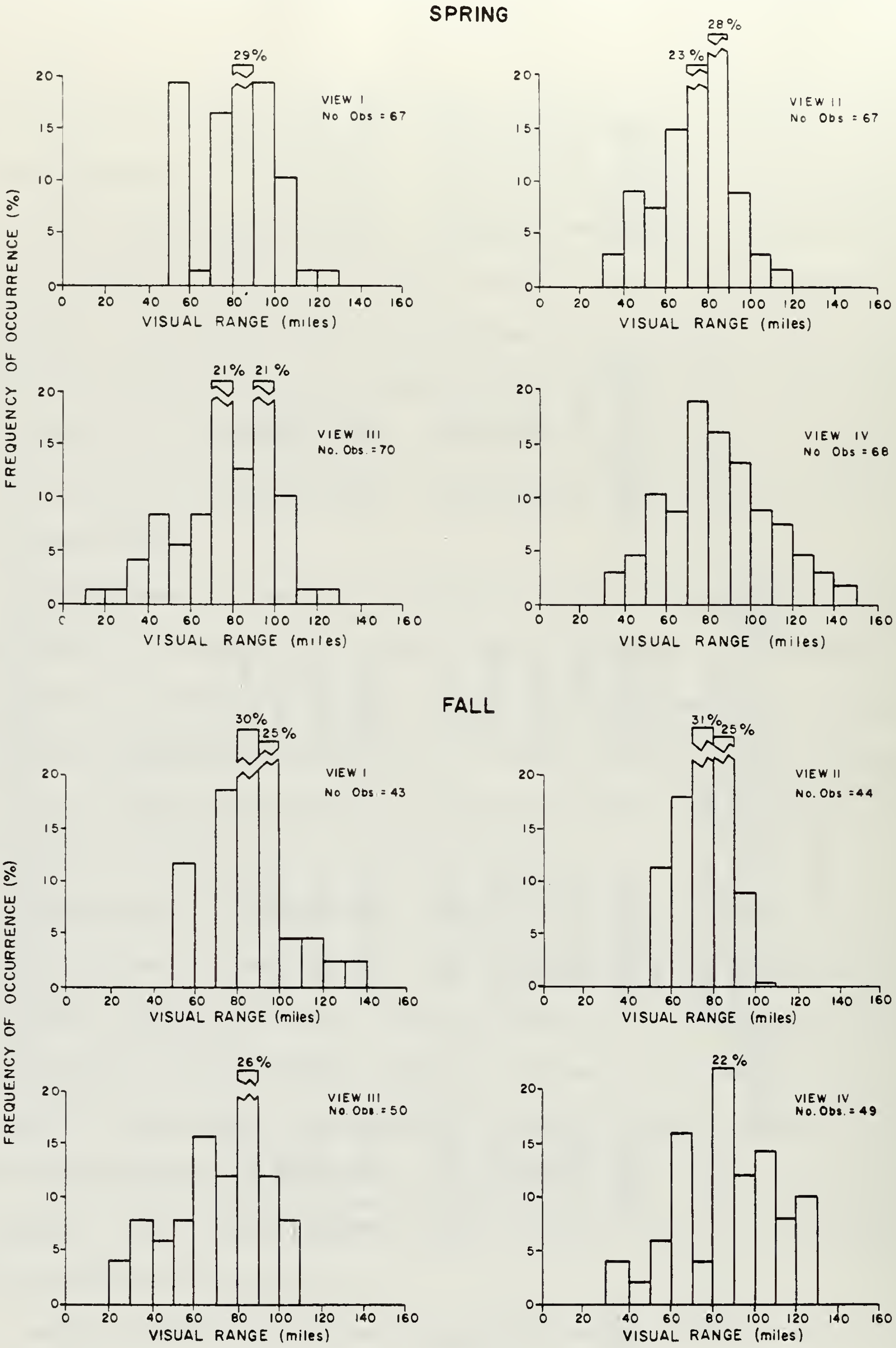


FIGURE 4
SEASONAL DISTRIBUTION OF VISUAL RANGE IN EACH VIEW PICEANCE CREEK BASIN, COLORADO SPRING and FALL, 1978

DAMES & MOORE

and III, respectively. The highest mean occurred in either View I or IV; depending on the season. During the Fall of 1978, however, the relative ranking of Views II and III reversed; the difference in their mean visual range was 5 miles.

To investigate any hourly trend in visual range which might exist, mean hourly visual ranges were computed for each view and for the composite of views as shown in Figure 5. The separation of Views I and II from Views III and IV in Figure 5 facilitates comparison of the individual trends.

To illustrate the clarity and change in contrast of the objects as the visual range changed during the day, color and B&W photographs taken in View III on October 29, 1978 are shown in Plate 3. Remarks in the Site Log describe the day as "sunny and bright", characterized by moderate haze. A synopsis of the day as described in the Site Log and the visual ranges obtained each hour follow:

0830 MST: VR = 91 miles
(illustrated) Slight haze Views I & II, Views III & IV very clear
Wind from southeast

0930 MST: VR = 80 miles
Slight haze Views I and II
Wind much stronger

1030 MST: VR = 75 miles
(illustrated) More haze Views I, II, III; clear on View IV
Very windy

1130 MST: VR = 68 miles
More haze all four views
Very windy

1300 MST: VR = 60 miles
Haze all four views
Gusting wind from SE

1400 MST: VR = 50 miles
(illustrated) Haze on View IV
Strong wind from SE

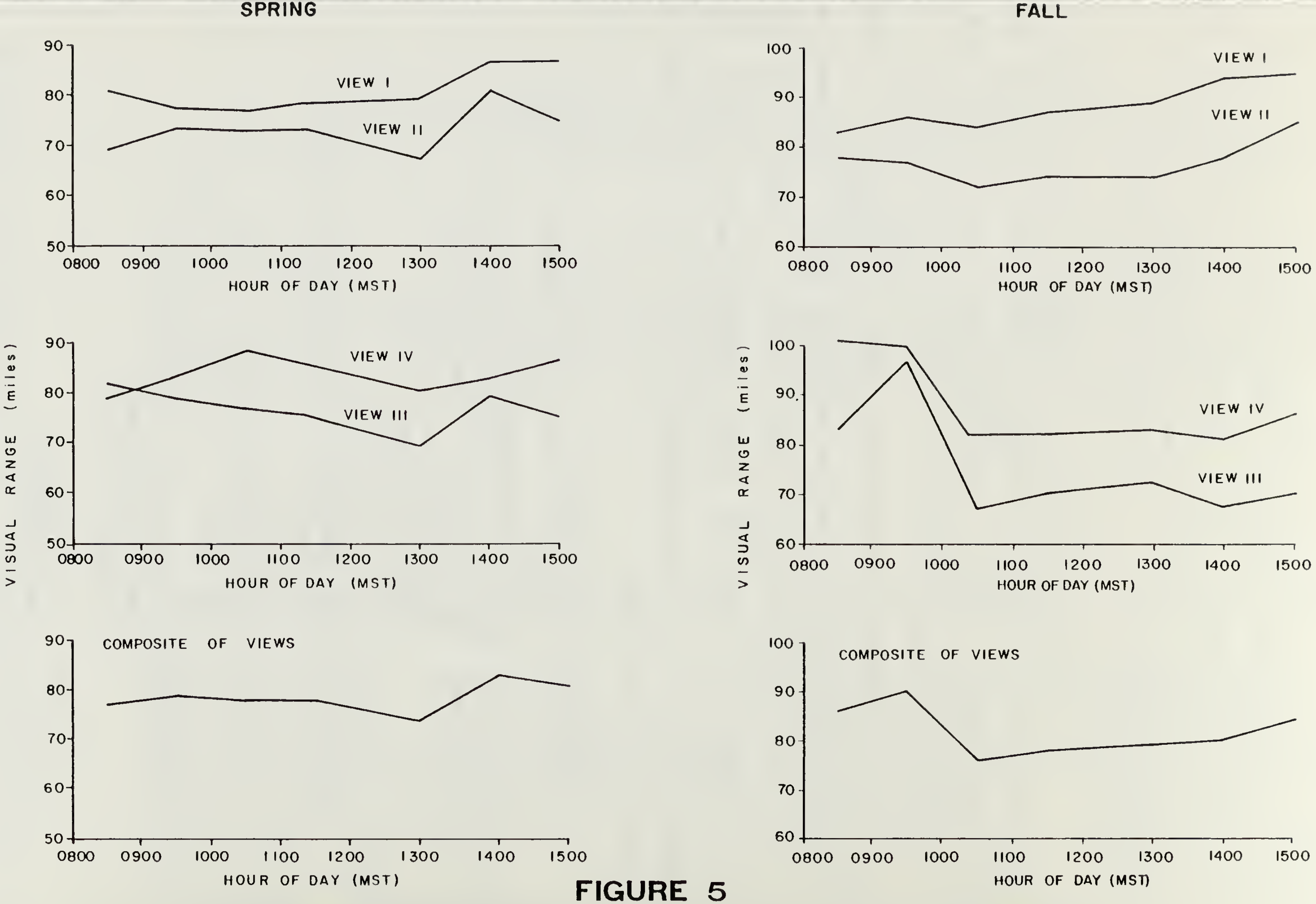
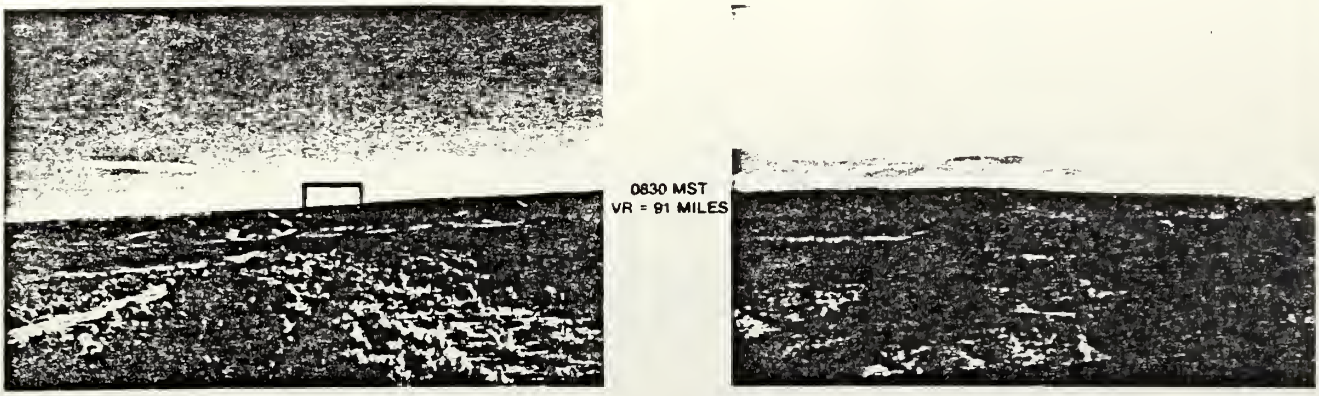


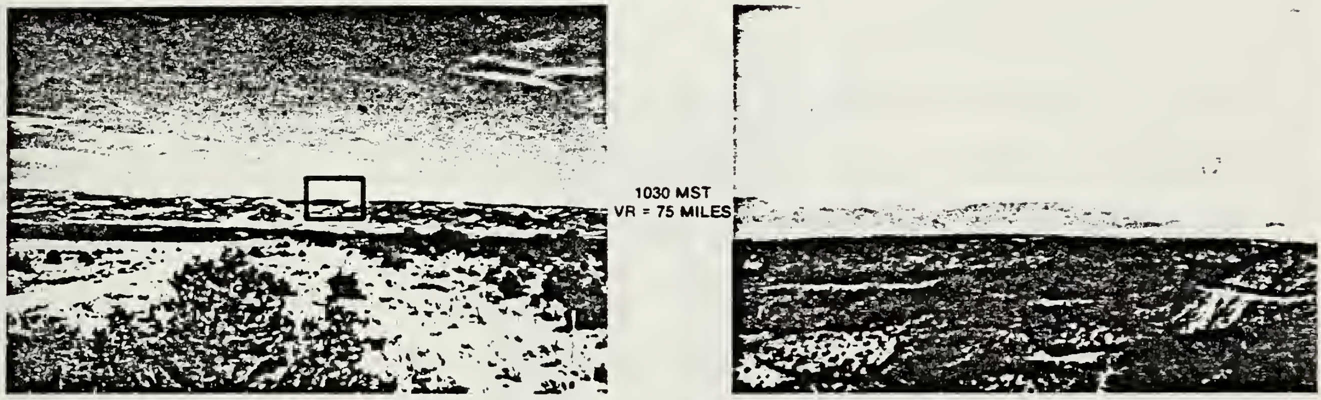
FIGURE 5
SEASONAL VARIATION IN MEAN HOURLY VISUAL RANGE
PICEANCE CREEK BASIN, COLORADO
SPRING and FALL, 1978

D/ ES & MOORE



0830 MST
VR = 91 MILES

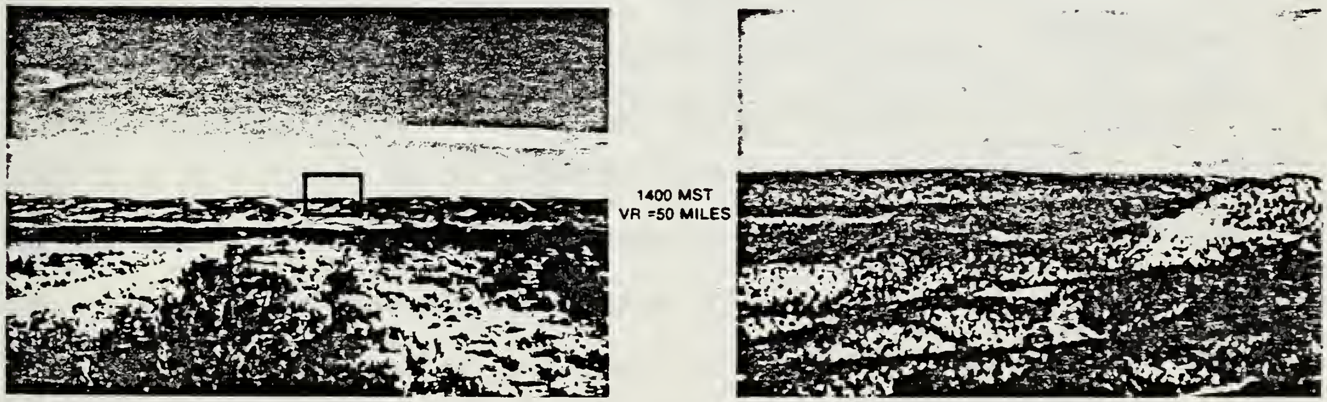
0930 MST
VR = 80 MILES
(NOT ILL.)



1030 MST
VR = 75 MILES

1130 MST
VR = 68 MILES

1300 MST
VR = 60 MILES
(NOT ILL.)



1400 MST
VR =50 MILES

1500 MST
VR = 58 MILES
(NOT ILL.)

PLATE 3
HOURLY VARIATIONS IN VISUAL RANGE
PICEANCE CREEK BASIN, COLORADO
SPRING and FALL, 1978

DAMES & MOORE

1500 MST: VR = 58 miles
Haze on View IV
Wind still strong from SE

D. EVALUATION OF VISUAL RANGE ON AN ANNUAL BASIS

Visual range measurements made during this study were generally high; 95 percent of the values exceeded 43 miles; 50 percent exceeded 81 miles. The range of values obtained was also quite high; visual ranges varied from less than 20 miles to over 140 miles. The distribution of these values is presented in Figure 6 with a overlay of the distribution obtained during the 1975-76 study. The generalized visibility in the Piceance Creek Basin area during the 1978 study was 79 miles; this same value was obtained during the 1975-76 study. The data base for the 1978 study includes only the Spring and Fall seasons, however. Using only the Spring and Fall seasons results in a generalized visibility for the 1975-76 study of 78 miles.

Hourly maximum visual ranges obtained during the year varied among the views; maximum values from 112 miles in View II to 142 miles in View IV were recorded. Hourly minimum visual ranges varied slightly more than the maximum values, ranging from 17 miles in View III to 51 miles in View I.

A summary of visual ranges obtained during the 1975-76 monitoring period and the 1978 period are presented in Table 5 for each view and for the composite of the views. The variation in the mean visual range of the four views presented in Table 5 is illustrated in Figure 7.

The distribution found for View I is unusual. The largest percentage of visual ranges obtained in View I occurred between 50 and 60 miles, yet a very small percentage occurred in the next interval, 60-70 miles. Distributions in View I similar to this were found during the 1975-76 study.

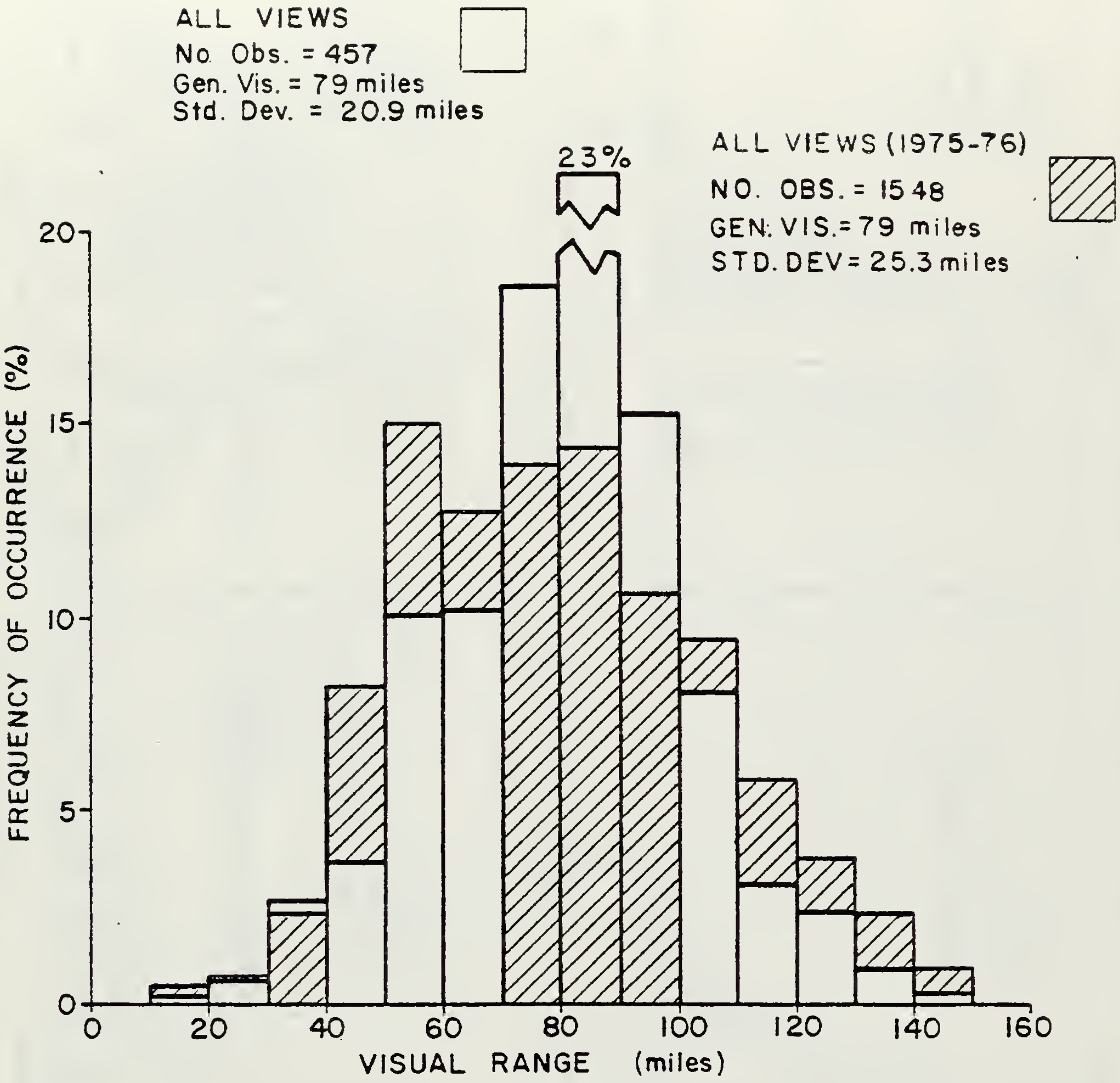


FIGURE 6
ANNUAL COMPOSITE DISTRIBUTION OF VISUAL RANGE
PICEANCE CREEK BASIN, COLORADO
SPRING and FALL, 1978

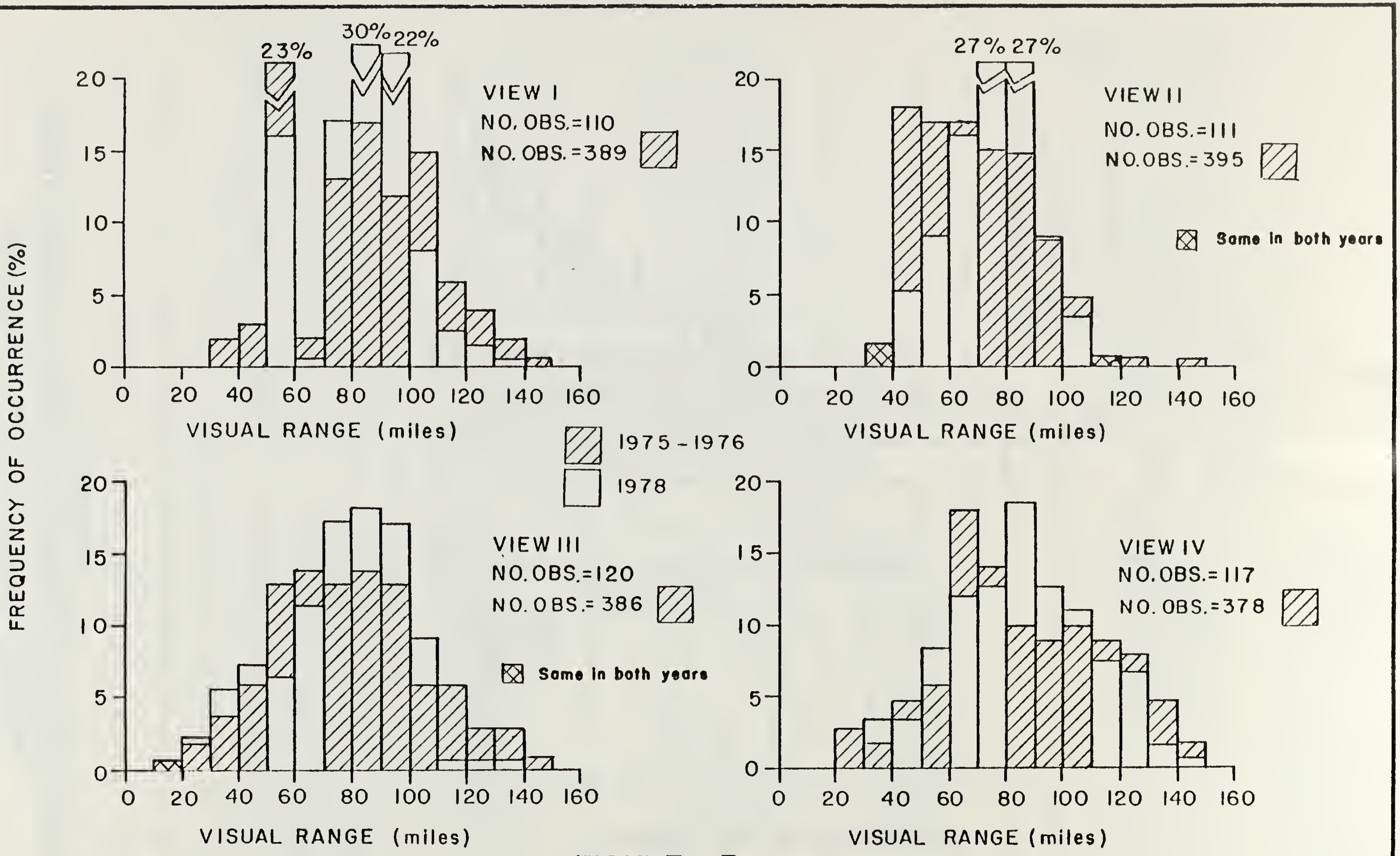


FIGURE 7
ANNUAL DISTRIBUTION OF VISUAL RANGE IN EACH VIEW
PICEANCE CREEK BASIN, COLORADO
SPRING and FALL, 1978

TABLE 5

ANNUAL VISUAL RANGE SUMMARY (MILES)
PICEANCE CREEK BASIN, COLORADO
SPRING AND FALL, 1978

VIEW	MEAN	HOURLY MAXIMUM	HOURLY MINIMUM	5 PERCENTILE	STANDARD DEVIATION
I	83 (83)*	130 (149)	51 (31)	53 (50)	16.7 (23.0)
II	74 (69)	112 (142)	32 (31)	46 (42)	15.2 (19.2)
III	74 (78)	132 (149)	17 (14)	33 (35)	23.0 (26.6)
IV	85 (85)	142 (148)	31 (22)	45 (41)	24.6 (28.8)
COMPOSITE	79 (79)	142 (149)	17 (14)	43 (41)	20.9 (25.3)

*Parenthetical numbers are from the 1975-76 study.

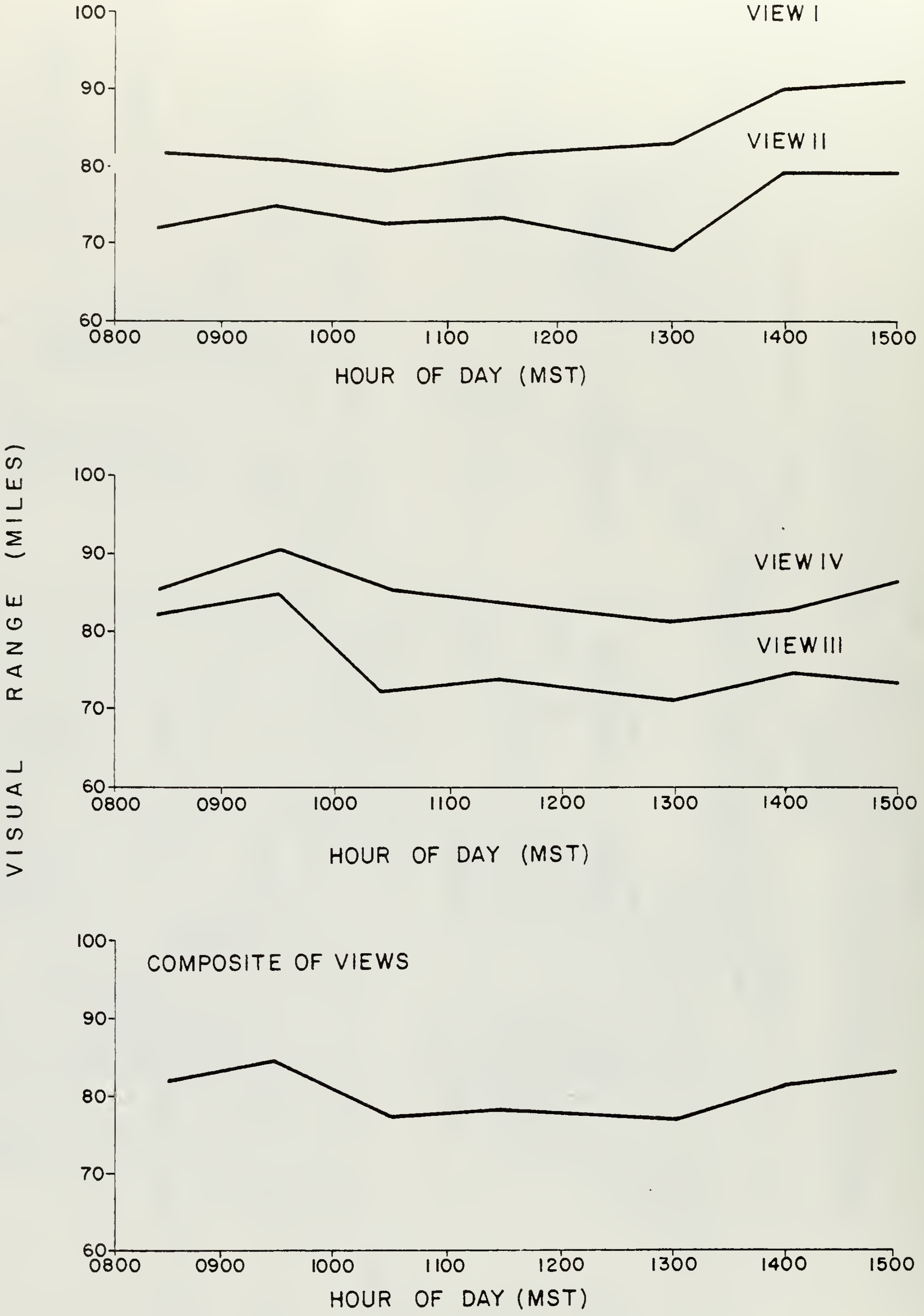


FIGURE 8
ANNUAL VARIATION IN THE MEAN HOURLY VISUAL RANGE
PICEANCE CREEK BASIN, COLORADO
SPRING and FALL, 1978

To investigate any hourly trend in visual range which might exist, mean hourly visual ranges for each view and for all views combined are presented in Figure 8 for each hour of photography. The separation of Views I and II from Views III and IV in Figure 8 have been performed only to facilitate comparison of the individual trends.

The mean hourly visual ranges shown in Figure 8 reflect trends seen during the 1975-76 study. One general trend noted in the mean hourly visual ranges in Views I and II was a net increase in the mean visual range during the day which was also seen during 1975-76. In Views III and IV, the mean visual range in View III remained lower over the course of the day than were obtained in View IV - also seen during the 1975-76 study. The composite of the four views is also illustrated in Figure 8. On an "average" day, the mean hourly visual range increases slightly during the second hour of the day, then decreases to near the early morning level and remains there until early afternoon when it begins a gradual increase through the remaining afternoon.

REFERENCES

Dames & Moore, 1977. Documentation of Visibility in the Piceance Creek Basin for Rio Blanco Oil Shale and C-b Shale Oil Projects.

Valley, Shea L., Handbook of Geophysics and Space Environments, Air Force Cambridge Research Lab., p. 7-4.

APPENDICES

APPENDIX A-1

HOURLY VISUAL RANGE - PICEANCE CREEK BASIN, COLORADO - SPRING, 1978
(miles)

HOUR	View	4/6	4/12	4/18	4/24	4/30			5/6	5/12	5/18	5/24	5/30	
0830	1	126	84	82	84	51			58	103	72	70	81	81.1
	2	112	81	72	65	32			45	88	64	63	70	69.2
	3	103	91	73	75	40			74	132	82	72	79	82.1
	4	-	107	112	90	50			45	89	71	69	78	79.0
0930	1	100	84	82	84	61			58	93	72	70	70	77.4
	2	92	88	72	65	-			45	95	88	54	63	73.6
	3	109	91	73	83	34			40	114	98	65	79	78.6
	4	134	116	88	107	51			45	97	61	78	86	86.3
1030	1	81	84	82	84	71			-	93	83	57	57	76.9
	2	92	81	79	81	42			45	88	88	63	70	72.9
	3	94	91	73	83	38			45	106	98	65	72	76.5
	4	126	107	88	90	35			-	106	71	94	78	88.3
1130	1	91	84	92	84	76			58	93	93	57	57	78.5
	2	78	81	72	81	68			56	95	95	54	54	73.4
	3	72	83	81	91	58			40	98	106	65	65	75.9
	4	94	133	112	99	50			45	114	50	86	69	85.2
1300	1	91	94	82	84	76			58	93	103	57	57	79.5
	2	78	88	72	73	63			37	80	80	44	63	67.8
	3	109	83	81	75	21			17	98	82	72	57	69.5
	4	102	124	88	99	59			50	71	61	69	78	80.1
1400	1	109	104	82	94	84			-	93	93	57	70	87.3
	2	98	88	72	73	81			-	80	102	70	63	80.8
	3	94	100	73	91	53			43	90	106	79	65	79.4
	4	110	99	79	90	36			74	80	106	78	86	83.8
1500	1	118	104	82	84	72			-	93	103	57	70	87.0
	2	105	88	72	73	76			-	80	80	44	54	74.7
	3	94	91	81	75	42			37	90	123	57	65	75.5
	4	142	81	79	72	51			79	89	123	86	69	87.1
Daily	1	102.3	91.1	83.4	85.4	70.1			58.0	94.4	88.4	60.7	66.0	
Avg.	2	93.6	85.0	73.0	73.0	60.3			45.6	86.6	85.3	56.0	62.4	
	3	96.4	90.0	76.4	81.8	40.8			42.2	104.0	99.3	67.8	68.8	
	4	118.0	109.6	92.3	92.4	74.4			56.3	92.3	77.6	80.0	77.7	
		102.2	93.9	81.3	83.2	54.5			49.7	94.3	87.6	66.1	68.8	

APPENDIX A-2

SITE LOG SHEETS

4/06/78

MST

0750 - Arrived site. Windy not to cold. Some sunshine but cloudy overhead. All views good visibility. Clouds on H on View 4. Road dry.

0830 - All views good - cl on hz on View 4 only. Real overcast on View 4. No haze anywhere. Still windy from southeast. Kinda unusual? Sun behind large cloud.

0930 - No haze. Clouds on H on View 4 only. Still windy, a little more sunshine.

1030 - Some haze, View 1 & 2. Shadows on View 1 & 2. Still windy, some sunshine with high wispy clouds.

1130 - High cloudiness, sun shining. Light hz on View 1 & 2. Cl on H on View 1, 2, 3.

1300 - High cloudiness, sun shining. Lt hz. View 1. Cl on H on View 1, 2, 3. Warm 50+ and windy.

1400 - High clouds. with sun, real light hz. View 1 & 2. Real clear on View 3 & 4. Shadows on View 1 & 2.

1500 - High clouds, general overcast, not too much sun. Light hz View 1 & 2 clear on View 3 & 4. Has been windy, blustry type spring day.

SITE LOG SHEETS

4/12/78

MST

0800 - Arrived site. Fantastic morning. Not a cloud in sky. Sunny.

0830 - No change. Light hz all views snow on View 3 & 4. Not too cold. No breeze. Hz a little more to the west.

0930 - Nice - slight breeze - SW. View 1 & 2. Have lt hz while View 3 & 4. Not too cold no breeze hz a little more to the west.

1030 - Same as 0930. Breeze picking up a little.

1130 - Lt Hz View 1. View 2, 3, 4 clear few scattered clouds. No cl on H some breeze from SW - Nice out.

1200 - Getting windy. Some scattered clouds. Very little hz on View 1 & 2. 3 & 4 clear. Still sunny most times clouds coming from east.

1400 - Windy with some pretty good gusts. Lt hz on View 1. View 2, 3, & 4 clear. More clouds.

1500 - Still windy - Snow on View 3. Almost gone. Some hz View 1. All other views clear. Not too warm now, otherwise real nice day.

Depart site

SITE LOG SHEETS

4/18/78

MST

0800 - Arrived site. Calm, mostly clear. All views visible.

0830 - Sunny with some cl. Lt hz all views. Cl on Hz on Views 2,3, 4. No cl on View 1, a patch of shadow between site & View 1. Not too cold. Snow on View 4.

0930 - Cl on H on View 3 & 4. Calm and real nice. Snow is gone on all views except View 4. Seem hazy in all directions today - windy yesterday.

1030 - Has turned windy, hz is almost gone except View 1. Cl on H on View 3 & 4. A few scattered cl now to the N.

1130 - Still windy, shadow on View 2. Ht hz. View 1 - Rest are clear scattered cl and sunny.

1300 - Continues to be windy - Lt hz View 1 & 2. Clear to the east.

1400 - No change - very few clouds left in sky now.

1500 - Same - Windy but otherwise has been a real nice day.

Depart site

SITE LOG SHEETS

4/24/78

MST
0800 - Calm, sunny day. All views visible. Some hz all views

0830 - No change. A few high wispy cl. Snow on View 4. No cl on H. Some dust or smoke in area of C-b worksite.

0930 - Cl on H View 1, 2, 3 - lt hz 1, 2, 3. No much Hz on View 4. Always heavier to the west. Small amount of dust can be seen from C-b work site. Sunny & lt. wind.

1030 - Cl on H View 1 & 2 lt hz west, View 3 & 4 not bad. Lt. wind has started.

1130 - Cl on horizon all views. Lt hz View 1 and 2. 3 & 4 mostly clear wind is picking up a little more. Sunny.

1300 - Quite a bit of wind, gusty. Cl on H all view lt hz. View 1 & 2 View 3 & 4 mostly clear becoming overcast.

1400 - Gusty winds at time. Cl on H all views. Shadow on View 3. Lt hz to the west, better to the east. Not as overcast as 1300.

1500 - Cl on H all views, Wind isn't quite as gusty, cloudy to the south Sunny - lt hz View 1 & 2, 3 & 4 pretty good.

Real nice day

SITE LOG SHEETS

4/30/78

MST

0805 - View 1 & 2 covered with clouds View 3 & 4 can be seen but not too clear. Overcast with some sun, light wind blowing from SW. Rain last night some shower to west and northwest.

0830 - Same as 0805. Some clearing on skyline to west.

0930 - No sun. Light rain total overcast. Can see View 4 only clouds on View 1, 2, & 3. Pictures taken from inside cabin.

1030 - All views in clouds, however close objects all view are visible. Sunny to south. Windy. Not raining at site now.

1130 - View 2 & 4 visible. Rain showers. Some sun to south. View 3 heavy clouds. View 1 clouds.

1300 - Good rain at site - overcast can see View 1. View 2, 3, & 4 covered with clouds. Wind, light out of SW. No sun now.

1400 - View 1 - Visible - some light cls on View 2. View 3 & 4 are covered with clouds. Rain showers to View 4 sun shining again. But mostly overcast.

1500 - View 1 & 2 visible. View 3 & 4 in clouds. Some sun, but mostly cloudy. About same all day.

Depart site

SITE LOG SHEETS

5/6/78

MST
0800 - 1" snow at site - overcast - with some sunshine. View 2 & 4 visibile with cl on View 1 & 4. Calm. Some blue skys too mostly overhead.

0830 - Cl on H all views. View 1, 2, 3 visible. View 4 in clouds. Calm. Overcast right now. Radio says 100% for showers & or snow today.

0930 - View 1 & 2 visible. View 3 just barely visible. View 4 snowing. Wind calm, a bit more cloudy - seems to be closing in a bit.

1030 - Weather getting worse. Can only see View 2. Storm moving west to east. Real light wind. No sun. Light snow on all higher areas.

1130 - View 1, 2, 3 visible. Snowing View 4. No sun. No wind. No warmth. Light snow & rain showers at sight. Not much change.

1300 - View 1 & 2 visible. Snowing elsewhere. Just minutes after pictures were taken a snowstorm at site.

1400 - All views snowing. Some sun overhead good snowstorm from NW.

1400 - Snowing all views. Sun overhead some wind. Not too hot a day.

Depart site

NOTE: Forgot to change the month on calibration card!

SITE LOG SHEETS

5/12/78

MST

0805 - Sunny with a few scattered clouds on horizon to North & NE. Breeze from SW. Nice morning.

0830 - Cl on H on View 3 & 4. Lt hz on View 1, 2, 3. View 4 real clear, snow on View 4. A low cl on 4 north & east. Sunny with breeze from SW. Some gusts.

0930 - Cl on H all views. Lt hz. View 1, 2, 3. View 4 clear. Light breeze and sunny. No dust at all from C-b work site, or from Ca either.

1030 - View 4 clearest I have ever seen. Cl on horizon View 1, 2, 3. Lt hz View 1 & 2. Sunny with breeze & some gusts from SW.

1130 - Cl on Horizon, View 1, 2, 3. View 4 real clear. Lt hz on 1 & 2. 3 is not bad. Sunny, light wind and some gusts.

1300 - Clear H on View 3. Lt hz View 1 and 2. View 3 and 4 clear. Almost a cloudless day - sunny - some wind and gusts.

1400 - No cl on H all views. View 1 light hz. View 2, 3, 4 are clean. Breeze blowing from W with some gusts. Clear & sunny.

1500 - No cl on H all views. Lt hz in west, cleaner to the east. Wind almost calm. Real nice day.

Depart site 1510

SITE LOG SHEETS

5/18/78

MST

0800 - Skiff of snow on ground at site. Breeze from west, cool, scattered clouds. Some sunshine. View 1, 2, 3 visible, hz to the northwest. View 4 in clouds. Road has been graded.

0830 - View 1, 2, 3 visible, some hz. Cl on 4. All views - scattered cls some sun, breeze (cool) from west.

0930 - All views visible. Lt hz in east to considerable amounts in west -- snow on View 4. Scattered cl, some sun.

1030 - Same as 0930 but a little more wind. Some gusts.

1130 - Quite a bit of hz to the west and clear to the east. Mostly overcast with shadows from sun. Lt breeze from W.

1300 - Not much change.

1400 - Overcast at site, with shadows View 3 & 4. Lt. breeze with gusts.

1500 - View 4 in sunshine, overcast rest of views. Not much haze as wind is stronger now.

Depart site 1510

SITE LOG SHEETS

5/24/78

MST

0800 - Only 2 cl in sky - wind from SE? Quite a bit of haze seems heaviest to the NW.

0830 - Heavy Hz on View 1 & 2. Moderatge hz on View 3 & 4. View 4 has snow. Windy - out of SE. Sunny. Sometimes gusty.

0930 - Note quite as hazy as 0830 still windy. Not much change.

1030 - View 4 is clearing up. Must be the wind. Still hard to see View 1. Windy from SE with some good gusts. Sunny & nice.

1130 - Same as 1030, but starting to get some scattered clouds mostly north.

1300 - Fairly clear to the east but gets hazy to a point in where you can hardly see View 1. Wind is shaking the shelter? Real gusty. Quite a few clouds from the south.

1400 - Real hazy View 1, View 2 not quite so bad, light hz. View 3, to almost clear View 4. Windy, clouds are making some shadows.

1500 - Same as 1400 - However cl are no on H on View 1, 2, 3, very windy day storm moving in from NW.

Depart Site 1515

SITE LOG SHEETS

5/30/78

MST
0755 - Pretty sunny morning. Light breeze from NE. All view visible Snow on View 4. All views lt. hz.

0830 - No cl or H View 1 & 2, 4, cl or h View 3, sunny with breeze from NW. Seems to be more hz in the NE than even before. Snow on View 4.

0930 - Weather about the same. No cl on h now. Some cl to the north. Light hz all views.

1030 - Not much change. View 4 may be a bit clearer. Seems like more hz in area of Rio Blanco.

1130 - Cloudy to the east. Wind from west. Lt hz all views. Cool outside.

1300 - Wind from NW. Cloudy over much of the south and east. View 4 much clearer and View 1 has more hz.

1400 - Overcast - some shadows. Cl on 4. All views moderate hz to the west to lt hz in the East. Still windy looks like some showers to the East.

1500 - Overcast - generally cloudy everywhere. Still windy getting pretty hazy in the east, View 4.

Depart site 1510

APPENDIX A-3

HOURLY VISUAL RANGE - PICEANCE CREEK BASIN, COLORADO - FALL, 1978
(miles)

HOUR	VIEW	10/5/78	10/11	10/17	10/23	10/29			11/4	11/10	11/16	11/22	11/28	
0830	1	91	58	83	97	95			73	-	-	-	-	82.8
	2	77	55	80	90	88			74	-	-	-	-	77.3
	3	80	70	84	-	91			86	-	-	-	-	82.2
	4	92	84	-	-	125			105	-	-	-	-	101.5
0930	1	93	58	85	110	97			74	-	-	-	-	86.2
	2	71	65	74	84	82			84	-	-	-	-	76.7
	3	83	65	65	-	80			96	-	-	-	-	97.0
	4	102	74	86	-	121			116	-	-	-	-	99.8
1030	1	95	58	86	88	87			88	-	-	-	-	83.7
	2	73	66	75	95	67			68	-	-	58	-	71.7
	3	87	66	66	84	75			76	37	-	40	-	66.4
	4	84	74	87	-	105			120	41	-	63	-	82.0
1130	1	72	73	74	102	74			89	-	-	-	-	86.7
	2	74	66	67	98	57			78	-	-	-	-	73.3
	3	81	75	59	95.	68			102	44	-	40	-	70.5
	4	86	88	88	115	62			114	53	-	50	-	82.0
1300	1	84	86	74	114	87			88	-	-	-	-	88.8
	2	83	76	76	79	68			58	-	-	-	-	73.3
	3	89	100	67	87	60			85	39	-	50	-	72.1
	4	99	102	53	97	62			106	62	-	-	-	83.0
1400	1	94	96	108	124	86			87	-	-	59	-	93.4
	2	73	84	76	96	57			77	-	-	-	-	77.2
	3	87	97	66	101	50			76	30	-	32	-	67.4
	4	99	102	89	117	84			85	62	31	64	-	81.4
1500	1	92	94	-	130	73			97	0	0	58	0	96.7
	2	80	82	82	102	66			100	-	-	83	-	85.0
	3	90	93	79	89	58			103	25	22	-	-	69.9
	4	97	123	100	94	80			121	62	33	62	-	85.8
Daily Avg.	1	88.7	74.7	85.0	109.3	85.6			85.1	-	-	58.5	-	
	2	75.9	70.6	87.0	92.0	69.3			77.0	-	-	70.5		
	3	85.3	80.8	69.4	91.2	68.8			89.1	35.0	31.0	40.5	-	
	4	94.1	92.4	83.8	105.8	91.3			109.6	56.0	32.0	59.8	-	
		86.0	79.6	78.0	99.5	78.8			90.2	45.5	28.7	54.9		

APPENDIX A-4

SITE LOG SHEETS

10/05/78

MST
0755 - Sunny morning. Calm. All views visable.

0830 - No CL. on H. Sunny & no haze. Calm.

0930 - Some clouds on Hor. to N. but not in picture area. Slight haze all views. Slight wind from east.

1030 - Same as at 0930. Still some haze. Wind now in west. Slightly cooler.

1130 - Some clouds on H. - N.W., but not in picture area. Slight haze all views. Wind from west.

1300 - CL. on H. views 1,2,4. Haze still exists. Wind from west. More haze on views 1 & 2.

1400 - CL on H. views 1,2,3. Haze still exists. Wind from N.W.

1500 - CL. on H. views 1,2,3,4. Has been a nice day.

1510 - Departed site.

SITE LOG SHEETS

10/11/78

MST

0800 - Arrived on sight. CL. on Hr. sights 1,2,3,4. Calm & warm. All views visable but haze on all sights.

0830 - CL. on Hr all views. Still sunny & warm. No wind.

0930 - More CL. on views 1,2,3. Not yet heavy on view 4. No wind. some haze. Looks like change of weather from N.W.

1030 - About same as 0930. Clouds slowly rising. Still no wind.

1130 - Getting quite a lot of haze, views 1,2,3. Breeze blowing from N.W. CL on Hr all views. Very clear south & east.

1300 - Haze has lifted. All sights still CL. on Hr, but clouds more broken. Slight breeze from N.W.

1400 - Clouds more broken. Haze has lifted. CL on Hr. Wind from N.W. Sunny & warm.

1500 - Some CL. on Hr. Views 1,2,4. Clear on view 3. Wind stronger. Still warm & sunny.

1510 - Departed site.

SITE LOG SHEETS

10/17/78

MST
0800 - Arrived at sight. Cloudy all directions. Sights are visable, but all have haze.

0830 - Cloudy all directions. All sights barely visable. Southeast wind. All sights have haze.

0930 - Same as at 0830. No wind. #4 barely visable.

1030 - Some broken clouds overhead. Still cloudy to sights. Wind from south.

1130 - Clouds more broken. All sights, clouds and haze. Wind stronger from south.

1300 - Variable high cloudiness. Haze on sights 1,2,3. Cannot see #4. Wind stronger from south.

1400 - Seems darker all sights. But high clouds so that all sights are visable.

1500 - About the same. More haze in picture areas. Wind strong.

1507 - Dearted site.

SITE LOG SHEETS

10/23/78

MST

0800 - Arrived on sight. Sunny & very clear to views 1 & 2. Views 3 & 4 cannot see due to low clouds. No wind. Cloudy to N & W.

0830 - Very clear, views of 1 & 2. Views 3 & 4 still covered with clouds. No wind.

0930 - Same as at 0830. Slight breeze from east.

1030 - Sights 1 & 2 still very clear. #3 can now be seen under clouds. #4 still covered with clouds. Clouds seem to be breaking up.

1130 - All sights now visable. Some haze on view 1. View 4, snow on peak.

1300 - Slight haze, views 1 & 2. Views 3 & 4 extremely clear. Slight breeze from west.

1400 - Same as at 1300. Slight breeze from west. Seems some cooler. Some haze #3 & 4. (No heat in shelter)

1500 - All locations very clear. Very nice day. Sunny & cool.

1510 - Departed site.

SITE LOG SHEETS

10/29/78

MST

0810 - Arrived at sight. All sights very clear. Sunny & Bright. Moderate wind from S.E.

0830 - Conditions same. Slight haze views 1 & 2. Views 3 & 4 very clear. Wind from S.E. cool. (No heat at location)

0930 - Same as at 0830. Wind much stronger.

1030 - More haze, views 1,2,3. Quite clear on view 4. Still very windy. A few high clouds forming.

1130 - More haze, all four locations. Very windy.

1300 - Still haze, all four locations. Strong & gusty wind from S.E.

1400 - CL. on Hr views 1,2,3. Haze on view 4. Strong wind from S.E.

1500 - Cl. on Hr. Views 1,2,3. Haze on view 4. Wind still strong from S.E.

1515 - Departed site.

SITE LOG SHEETS

11/04/78

MST
0800 - Arrived at sight. Some high clouds. No wind. Light clouds all directions (trying new equipment today). Conditions same. Light clouds all directions. But sights are visable.

0930 - Condition same. Little more haze. Slight breeze from S.E.

1030 - Light clouds & haze, views 1 & 2. A little less haze, views 3 & 4. Slight breeze from S.E.

1130 - Conditions same. Clouds in background, all locations. Views 1 & 2 more haze. Wind has gotten stronger.

1300 - High clouds & haze, views 1,2,3. Clearer on view 4. Conditions about same all day.

1400 - Conditions same. Wind has let up some.

1500 - Haze has lifted some. High clouds on all locations. Conditions have remained same all day.

Tried new equipment today. Am sure I need more instruction. No consistancy to readings.

1515 - Departed site.

SITE LOG SHEETS

11/10/78

MST

0800 - Arrived at sight. Snowing lightly. Light snow cover at sight. No sights are visable.

0830 - Conditions same. Light snow. No wind. Visability about 2 miles.

0930 - Visability has lifted some. Still no sights visable. Not snowing at present.

1030 - Little more visability. No sights yet visable.

1130 - Clouds all locations. Getting much colder.

1300 - Cloudy views 1-2-3. View 4 barely visable - (Tested this view with new instrument). First reading I have taken today. View 4 only.

1400 - CL views 1-23. #4 barely visable. Took reading on instrument view, 4 only.

1500 - Cloudy. Conditions same as at 1400. Reading of new instrument on view 4 only.

This has been a cloudy, cold day.

1515 - Departed site.

SITE LOG SHEETS

11/16/78

MST

0810 - Arrived at sight. About 8" of snow on ground. Completely socked in. Visibility all directions about 100 yards. No wind.

0830 - Conditions same.

0930 - Conditions same.

1030 - Fog has lifted some. Visibility now about ½ mile.

1130 - Still no sights visable. Visability about 1 mile. No wind.

1300 - Visibility much greater. Still no sights visable. No wind. Partly cloudy.

1400 - Conditions about same as at 1300. View #4 slightly visable. CL on Hr. all directions.

1500 - CL obstruct views 1-23. #4 slightly visable. View 4 is only time I could take reading on new instrument.

Has been a cold day. No wind. Departed sight 1520.

SITE LOG SHEETS

11/22/78

MST

0820 - Arrived a little late. Slipped off road on way in. Snowing hard at present. About 1 inch of new snow on ground. Looks like it will be another bad day.

0830 - Conditions same. Snowing hard. Visability about ½ mile all directions. Slight wind from S.E.

0930 - Still snowing, but is clearing. Some blue sky overhead. Slight wind from south.

1030 - View #1 not visable. Views 2-34 barely visable. Wind strong from south. Very cold. No haze in clearing areas.

1130 - Views 1 & 2-4 not visable. View 3 is visable. Cloudy all directions. Strong wind from south. Cold.

1300 - Views 1 & 2 not visable. Snowing to the west & N.W. Views 3 & 4 visable with clouds overhead. Wind is strong from south with some drifting now to 2'.

1400 - All sights visable with background & HR of clouds. Still very windy and cold.

1500 - All sights visable. CL on HR. No haze but clouds all around. Windy and cold.

1520 - Departed site.

SITE LOG SHEETS

11/28/78

MST

0800 - Snowing lightly. Completely overcast. About 6" new snow on ground. Cold wind from south.

0830 - Snowing harder. Visability about ½ mile. Completely overcast. About a foot of snow on ground.

0930 - Conditions same. Snowing. Wind from south. Looks like another bad day. "4th day in a row."

1030 - Snowing very light. No sights yet visable. Wind strong from south. Cloud cover not so heavy now.

1130 - No sights yet visable. Strong wind from south and very cold.

1300 - No sights visable. Snowing lightly again. Wind strong. Extremely cold.

Because of poor visibility - blowing and drifting snow - decided to leave now rather than take a chance on getting caught in worse weather.

1345 - Departed site.

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NOISE

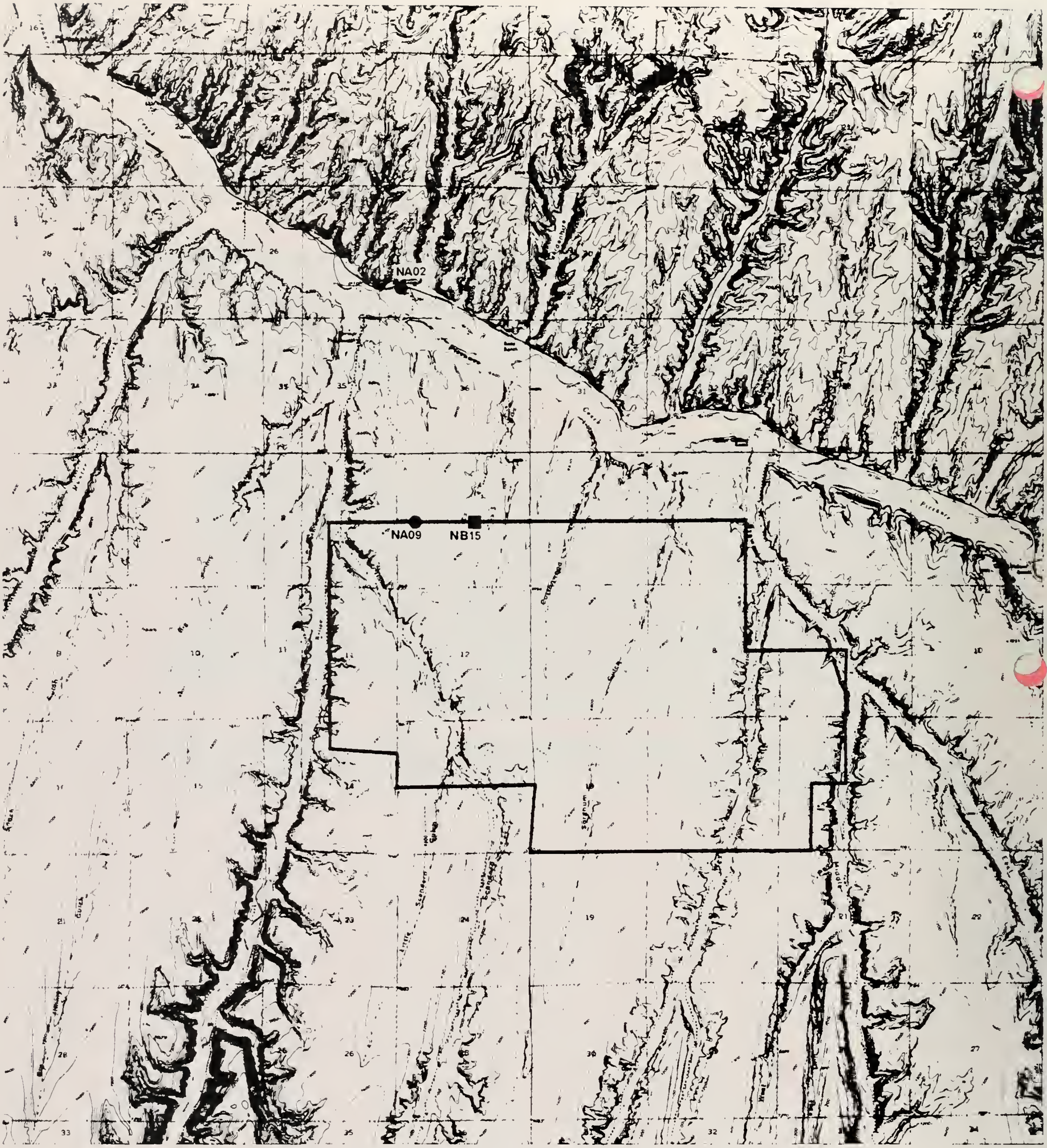
II B-5 NOISE

This section deals with environmental noise. Occupational noise exposure is covered under Health and Safety.

Traffic noise measurements are made one day per week approximately at morning shift change at Stations NA02 and N A09 (Figure II B-15) along Piceance Creek road and on the access road at the tract boundary, respectively. The general radio 1565 sound level meter (SLM) is used to measure peak noise levels at A weighting. Background levels (i.e., no traffic) are obtained the same day at A, B, C weightings. Results are presented on Tables II B-47 through II B-74 for October, 1978 through April, 1979.

Tract noise surveillance has been determined since February 1978, at Station NB15 (Figure II B-15) located in the vicinity of proposed ancillary development activity. The B & K precision SLM (model 2203) is located on the tract northern boundary. Continuous noise measurements at A weightings are made for 24 hours every 6th day. Results are presented on Tables II B-75 through II B-78 for October, 1978 through January, 1979. This sound level meter was returned to the manufacturer in late January, 1979 for overhaul and calibration. Due to a problem of unavailability of replacement parts, the meter was not returned to the C-b Tract during this report period. The single station acts as a control during off-shift or "quiet" intervals and as a development site during operational periods of the day.

An attempt has been made to designate all station locations by their four-digit computer station codes. Further information on these codes can be found in Section IV.



NOISE DEVELOPMENT MONITORING NETWORK

● = Traffic Noise Station - Shift Change - 1 day/ wk.

■ = Tract Noise Surveillance - Continuous - every 6th day

Figure II B-15

Table II B-47

TRACT C-b NOISE STUDY DATA SHEET

DATE: 10-4-78

TEMPERATURE: 22°C

WIND SPEED: - 0 - (MPH)

METER TYPE: General Radio 1565-B
METER ID#: 28612
MICROPHONE SERIAL NO.: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (db)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	0900	Avg.: Less than 40	S	East of Work Area	90°	------
Parking Lot	0920	Avg.: 65	S	Above Shaft	90°	------
[illegible]rd Shack	0920	Avg.: Less than 40	S	West of Road	90°	-------
		65	--	--	--	Pickup S
		60	--	--	--	Car S
		58	--	--	--	Car S
		73	--	--	--	Dump Truck
		60	--	--	--	Pickup N
		55	--	--	--	Car N
		56	--	--	--	Pickup N
		68	--	--	--	Truck N
	0950	50	--	--	--	Car N
C-b Entrance	1000	Avg.: Less Than 40	S	North of Highway	90°	
		72	--	--	--	Truck W
		75	--	--	--	Truck W
	1015	68	--	--	--	Pickup W
		70	--	--	--	Car W
		62	--	--	--	Car E
		65	--	--	--	Car E
		78	--	--	--	Dump Truck W
	1045	85	--	--	--	Truck W
		73	--	--	--	Car W
	1050	81	--	--	--	Truck W

Table II B-48

TRACT C-b NOISE STUDY DATA SHEET

DATE: 10-10-78

TEMPERATURE: 20°C

WIND SPEED: 8-10 NE (MPH)

METER TYPE: General Radio 1565-B
METER ID#: 28612
MICROPHONE SERIAL NO.: 44682

SITE	TIME (MST)	WEIGHTING (A,B,C) + READING (db)	METER RESPONSE S = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1200	Avg.: Less than 40	S	East of Area	90°	N/A
Parking Lot	1205	Avg.: 60	S	South of Area	90°	N/A
Guard Shack	1215	Avg.: Less than 40	S	West of Road	90°	
	1230	70	--	--	--	Van S
		60	--	--	--	Car
		66	--	--	--	Pickup S
		50	Light Traffic	--	--	Truck N
		67	--	--	--	Water Truck N
		70	--	--	--	Van N
	1240	70	--	--	--	Ford N
		82	--	--	--	Cement Truck S
	1255	60	--	--	--	Pickup S
		68	--	--	--	Pickup N
		72	--	--	--	Pickup S
	1300	78	--	--	--	Car S
		72	--	--	--	Pickup S
		70	--	--	--	Car S
	1325	70	--	--	--	N
C-b Entrance At Piceance Road	1330	72	--	South Side of Highway	--	Van E
		68	--	--	--	Pickup E
		68	--	--	--	Pickup W
		73	--	--	--	Pickup W
	1345	70	--	--	--	Pickup E

Table II B-49

TRACT C-b NOISE STUDY DATA SHEET

DATE: 10-20-78

TEMPERATURE: 18°C

WIND SPEED: 15-20 S (MPH)

METER TYPE: General Radio 1565-B

METER ID#: 28612

MICROPHONE SERIAL NO.: 44682

SITE	TIME (MST)	WEIGHTING [✓ A],B,C + READING (db)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1205	Avg.; Less than 40	S	East Main Shaft	90°	------
Parking Lot	1210	Avg.: 62	S	On Lot	90°	------
[illegible]rd Shack	1215	Avg.: Less than 40	S	West of Road	90°	-------
		60	--	--	--	Ford Pickup S
		72	--	--	--	UPS Truck N
		62	--	--	--	Chevy Truck S
		65	--	--	--	Chevy Truck N
	1230	60	--	--	--	Ford Car S
		60	--	--	--	Pont. Car N
		62	--	--	--	Chevy Pickup S
		74	--	--	--	Water Truck N
		78	--	--	--	Water Truck W
		58	--	--	--	Ford Car N
	1300	Avg. 52	Revey Project South of Guard Shack			
C-b Entrance	1315	82	--	--	--	Equipment Truck E
		70	--	--	--	Chevy Car E
		75	--	--	--	Chevy E
		75	--	--	--	Car E
		58	--	--	--	Olds Car W
		58	--	--	--	Chevy Pickup W

Table II B-50

TRACT C-b NOISE STUDY DATA SHEET

DATE: 10-26-78

TEMPERATURE: 16°C

WIND SPEED: - 0 - (MPH)

METER TYPE: General Radio 1561-B

METER ID#: 28612

MICROPHONE SERIAL NO.: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (db)	METER RESPONSE S = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1230	Avg.; Less than 40	S	East of Site	90°	
Parking Lot	1235	Avg.: 54	S	On Lot	90°	
Guard Shack	1240	58	--	West of Road	90°	Pickup
		65	--	--	--	Truck S
		75	--	--	--	Water Truck N
		75	--	--	--	Water Truck S
		72	--	--	--	Truck S
		75	--	--	--	Pickup N
		75	--	--	--	Water Truck S
		50	--	--	--	Carry All S
	1310	60	--	--	--	Blazer N
		55	--	--	--	Wagon N
		68	--	--	--	S
		75	--	--	--	Dump Truck S
	1330	50	--	--	--	Blazer N
		68	--	--	--	Pickup S
		72.5	--	--	--	Water Truck S
C-b Entrance	1340	70	--	South Side of Road	--	Pickup W
		72	--	--	--	UPS Truck E
		69	--	--	--	Jeep E
		65	--	--	--	Car W
		75	--	--	--	Pickup W
		60	--	--	--	Car E
	1355	75	--	--	--	Truck E

Table II B-51

TRACT C-b NOISE STUDY DATA SHEET

DATE: 11-1-78

TEMPERATURE: 20°C
WIND SPEED: - 0 - (MPH)

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1330	Avg.: Less than 40	S	East of Area	90°	
Parking Lot	1340	Avg.: 63	S	On Lot	100 yds South	
Guard Shack	1345	78	--	--	--	Water Truck S
		72	--	--	--	UPS Truck S
		65	--	--	--	Moon Car S
		72	--	--	--	Water Truck N
		68	--	--	--	Pickup N
		68	--	--	--	Dump Truck N
	1330	65	--	--	--	Car S
		72	--	--	--	Dump Truck S
		65	--	--	--	Blazer S
	1345	65	--	--	--	Pickup N
C-b Entrance	1400	78	--	South of Hiway	40 ft South	Truck W
		65	--	--	--	Pickup W
		60	--	--	--	Car E
		63	--	--	--	Car E
		68	--	--	--	Pickup W
		76	--	--	--	Dump Truck W
		80	--	--	--	Truck E
		62	--	--	--	Car E
	1420	69	--	--	--	Car E

Table II B-52

TRACT C-b NOISE STUDY DATA SHEET

DATE: 11-10-78

TEMPERATURE: 18°C
WIND SPEED: 5 - 8 S (MPH)

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1300	Avg.: Less than 45	S	East of Ancill.	90°	
Admin. Bldg.	1310	Avg.: 58	S	Parking Lot	90°	
Guard Shack	1315	56	S	100' West of Road	90°	Car [illegible]
		60	--		--	Pickup S
		58	--	--	--	Car S
		72	--	--	--	Truck N
		75	--	--	--	Water Truck N
		53	--	--	--	Car S
		58	--	--	--	Car N
		62	--	--	--	Pickup S
		61	--	--	--	Pickup S
		65	--	--	--	Pickup S
		55	--	--	--	Car N
		75	--	--	--	Truck S
	1400	63	--	--	--	Truck S
C-b Entrance Piceance Hiway	1408	78	S	50' South of Highway	90°	Pickup E
		68	--		--	Car E
		72	--	--	--	Pickup E
		70	--	--	--	Car W
		75	--	--	--	Pickup W
		82	--	--	--	Truck E
		80	--	--	--	Truck E
		65	--	--	--	Car E
		69	--	--	--	Pickup W
		73	--	--	--	Pickup E
		60	--	--	--	Car W

Table II B-53

TRACT C-b NOISE STUDY DATA SHEET

DATE: 11-14-78

TEMPERATURE: 0°C
WIND SPEED: 5 N (MPH)

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1300	Avg: Less than 40	S	East of Tract	90°	
Admin. Bldg.	1310	Avg.: 68	S	Parking Lot	90°	
Guard Shack	1320	72	--	West of Road	90°	Tank Truck S
		60	--	--	--	Car S
		78	--	--	--	Flatbed Trk N
		65	--	--	--	Car S
		73	--	--	-- Tour	Station Wagon S
		65	--	--	--	Car S
	1345	78	--	--	--	Truck N
		68	--	--	--	UPS Truck S
C-b Entrance	1400	65		South of Hiway	--	Pickup E
		60	--	--	--	E
		78	--	--	--	Truck W
	1405	65	--	--	--	Car E
		63	--	--	--	Car E
		68	--	--	--	Pickup W
		81	--	--	--	Truck E
		63	--	--	--	Car W
		67	--	--	--	Pickup E
		65	--	--	--	Car W
	1430	65	--	--	--	Pickup W
		65	--	--	--	Pickup N
		72	--	--	--	Blazer W
		65	--	--	--	UPS Truck W
		80	--	--	--	Stock Truck S
		73	--	--	--	Pickup S

Table II B-54

TRACT C-b NOISE STUDY DATA SHEET

DATE: 11-27-78

TEMPERATURE: 32°F
WIND SPEED: - 0 - (MPH)

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1300	Avg.: Less than 40	S	East of Site	90°	
Parking Lot	1320	Avg.: 60	S	South of Site	90°	
Guard Shack	1330	58	S	West of Road	90°	Truck
		50	--	--	--	UPS Truck
		55	--	--	--	Pickup N
		58	--	--	--	Pickup N
		62	--	--	--	Truck S
	1345	62	--	--	--	Water Truck N
Light Traffic		51	--	--	--	Car N
		56	--	--	--	Pickup S
		53	--	--	--	Car N
	1400	57	--	--	--	Truck N
C-b Entrance	1415	72	S	South of Hiway	90°	Pickup E
		78	--	--	--	Cement Trk E
		56	--	--	--	Car W
		60	--	--	--	Car W
		58	--	--	--	Pickup W
		60	--	--	--	Pickup E
		58	--	--	--	Car W
		56	--	--	--	Car E

Table II B-55

TRACT C-b NOISE STUDY DATA SHEET

DATE: 12-7-78

TEMPERATURE: 7°C
WIND SPEED: 0 - 5 S (MPH)

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1300	Avg.: Less than 50	S	East of Site	90°	
Admin. Bldg.	1315	Avg.: 65	S	Parking Lot	90°	
Guard Shack Parking Lot	1320	Avg.: 52	S	Parking Lot	90°	
		65	--	--	--	Truck S
		80	--	--	--	Water Truck N
	1325	63	--	--	--	Car S
		65	--	--	--	Pickup S
		63	--	--	--	Pickup S
		65	--	--	--	Car N
	1340	78	--	--	--	Truck S
		69	--	--	--	Pickup S
		59	--	--	--	Pickup N
		81	--	--	--	Pickup N
	1400	80	--	--	--	Dump Truck N
		65	--	--	--	Pickup S
C-b Entrance Piceance Road	1415	82	--	North Side	--	Truck E
		75	--	--	--	Pickup E
		80	--	--	--	Truck W
	1420	70	--	--	--	Pickup W
		68	--	--	--	Car W
		70	--	--	--	Pickup W
		65	--	--	--	Car E
	1435	80	--	--	--	Truck E
		65	--	--	--	Car E
	1445	Avg.: Less than 50	S	--	--	

Table II B-56

TRACT C-b NOISE STUDY DATA SHEET

DATE: 12-13-78

TEMPERATURE: -14°C
WIND SPEED: - 0 - (MPH)

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1330-40	Avg.: Less than 40	S	East of Site	90°	
Parking Lot	1345-55	Avg.: 62	S	On Lot	90°	
Guard Shack West of Road	1400	Avg.: Less than 40	S	West of Road	90°	
		53	--	--	--	Pickup N
		50	--	--	--	Pickup S
		58	--	--	--	C-b Gas Trk
		58	--	--	--	Van S
		57	--	--	--	Pickup N
	1430	60	--	--	--	Pickup N
		58	--	--	--	UPS Truck
		52	--	--	--	Car N
	1444					
C-b Entrance Piceance Hiway	1450	68	S	South of Hiway	90°	Pickup W
		65	--	--	--	Pickup W
		80	--	--	--	Truck E
		65	--	--	--	Pickup W
	1510	82	--	--	--	Truck W
		71	--	--	--	Pickup E
		69	--	--	--	Car E
	1530	65	--	--	--	Pickup W

Table II B-57

TRACT C-b NOISE STUDY DATA SHEET

DATE: 12-19-78

TEMPERATURE: 0°C
WIND SPEED: - 0 - ~~(MPH)~~

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION	
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE		
042	1415	Avg.: Less than 50	S	East of Site	90°		
Admin. Bldg.	1420	Avg.: 58	S	Parking Lot	90°		
Guard Shack	1425	81	S	--	--	Water Truck	S
		60	--	--	--	Pickup	S
		62	--	--	--	Car	S
		68	--	--	--	Pickup	N
	1430	65	--	--	--	Car	S
		78	--	--	--	Dump Truck	N
		78	--	--	--	Pickup	N
		63	--	--	--	Car	N
	1500	60	--	--	--	Car	S
		80	--	--	--	Truck	S
		70	--	--	--	UPS Truck	S
C-b Entrance	1510	72	--	--	--	Car	E
		70	--	--	--	Pickup	E
		80	--	--	--	Truck	E
		78	--	--	--	Truck	E
		68	--	--	--	Car	E
	1525	65	--	--	--	Car	W
		75	--	--	--	Pickup	W
		70	--	--	--	Car	E

Table II B-58

TRACT C-b NOISE STUDY DATA SHEET

DATE: 1-3-79

TEMPERATURE: -9°C
WIND SPEED: 0 - 3 S (MPH)

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1330	Avg.: Less than 40	S	East of Site	90°	
Admin. Bldg.	1340	Avg.: 56	S	Parking Lot - South	90°	
Guard	1350	60	--	--	--	Truck [illegible]
Shack		53	--	--	--	Blazer [illegible]
West of	1400	53	--	--	--	Pickup N
Road		65	--	--	--	VW Bus N
	1415	66	--	--	--	Truck N
Light		58	--	--	--	Pickup S
Traffic	1440	58	--	--	--	Station Wagon S
	Not much traffic in or out today Avg: Less than 40					
C-b	1450	78	--	--	--	Pickup W
Entrance		53	--	--	--	Station Wagon W
on	1510	75	--	--	--	Pickup E
Piceance		72	--	--	--	Car E
Road		68	--	--	--	Car W
		78	--	--	--	Pickup E
		74	--	--	--	Blazer W
		73	--	--	--	Van W

Table II B-59

TRACT C-b NOISE STUDY DATA SHEET

DATE: 1-10-79

TEMPERATURE: -13°C
WIND SPEED: - 0 - (MPH)

Snowy & Overcast

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1050	Background 41-42 Avg.	S	200 yards East of Site	90°	
Parking Lot	1055	Avg.: 61	S	On Lot	90°	
Guard Shack	1100	65	S	West Side of Road	90°	Car S
		53	--		--	Car N
	1110	74.5	--	--	--	Water Truck S
		59	--	--	--	Tel.Co. P/U N
		60	--	--	--	Phone Truck S
		75	--	--	--	Dlvry Truck S
	1145	Avg.: Less than 40				
	Very light traffic					
C-b Entrance	1300	Avg.: Less than 40	S	South of Hwy	90°	
	1305	74	S	South of Hwy	90°	Car E
		65	--	--	--	Car W
		72	--	--	--	Pickup W
	1320	78	--	--	--	Truck W
		68	--	--	--	Car E

Table II B-60

TRACT C-b NOISE STUDY DATA SHEET

DATE: 1-18-79

TEMPERATURE: 40°F
WIND SPEED: 1 - 2 SW (MPH)

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION	
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE		
042	1330	Avg.: Less than 40	S	East of Site	90°		
Admin. Bldg.	1335	Avg.: 55	S	Parking Lot	90°		
Guard Shack	1340	60	S	West of Road	90°	UPS Truck	S
		50	--	--	--	Blazer	[illegible]
		68	--	--	--	Station Wagon	N
		65	--	--	--	Pickup	N
	1400	60	--	--	--	Pickup	S
		64	--	--	--	UPS Truck	N
		65	--	--	--	Blazer	N
		Less 40 Avg.					
C-b Entrance Piceance Road	1445	Avg.: 55	S	Maintainer Working in Area			
		72	S	South of Hiway	90°	Pickup	W
		65	--	--	--	Car	W
		78	--	--	--	Pickup	E
	1500	75	--	--	--	Pickup	E
		68	--	--	--	Car	W
		82	--	--	--	Truck	W
		72	--	--	--	Van	E
	1525	63	--	--	--	Car	S

Table II B-61
TRACT C-b NOISE STUDY DATA SHEET

DATE: 1-25-78

TEMPERATURE: 20°F
WIND SPEED: - 0 - (MPH)

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION	
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE		
042	1430	Avg.: Less than 40	S	East	90°		
Admin. Bldg.	1435	Avg.: 54	S	South of Area	90°		
Guard Shack	1440	55	S	West of Road	--		
		58	--	--	--	Pickup	N
		60	--	--	--	Car	S
		62	--	--	--	Car	S
	1500	69	--	--	--	Truck	S
		52	--	--	--	Car	N
		55	--	--	--	Car	N
		63	--	--	--	Van	S
	1530	Avg.: Less than 40					
C-b Entrance Piceance Road	1540	Avg.: Less than 40					
		78	--	--	--	Car	E
		72	--	--	--	Car	E
		80	--	--	--	Pickup	W
		68	--	--	--	Car	E
		85	--	--	--	Road Grader	W

Table II B-62

TRACT C-b NOISE STUDY DATA SHEET

DATE: 2-1-79

TEMPERATURE: 20°F
WIND SPEED: 2 - 5 S (MPH)

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1300	Avg.: Less than 40	S	East of Site	90°	
Parking Lot	1310	Avg.: 62	S	South of Site	90°	
uard Shack	1315	Avg.: Less than 40	S	West of Road	90°	
		75	--	--	--	Gas Truck S
		63	--	--	--	Pickup N
		60	--	--	--	Pickup N
	1330	78	--	--	--	Semi Truck N
		59	--	--	--	Car S
		60	--	--	--	Car S
		72	--	--	--	Pickup N
		55	--	--	--	Car S
	1400	72	--	--	--	Semi Truck S
		74	--	--	--	Gas Truck N
C-b Entrance	1430	Avg.: Less than 40	S	South of Road	90°	
		72	--	--	--	Car E
		70	--	--	--	Car E
		78	--	--	--	Pickup W
		82	--	--	--	Semi Truck W
	1500					
	1530					

Table II B-63

TRACT C-b NOISE STUDY DATA SHEET

DATE: 2-9-79

TEMPERATURE: -6°C
WIND SPEED: - 0 - (MPH)

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1000	Avg.: Less than 40	S	East of Site	90°	
Parking Lot	1015	Avg.: 60	S	South of Site	90°	
Guard Shack	1020	Avg.: Less than 40	--	West of Road	90°	
		55	--	--	--	Car S
		59	--	--	--	Car S
		68	--	--	--	Truck N
		60	--	--	--	Car S
		54	--	--	--	Pickup S
		58	--	--	--	Pickup N
C-b Entrance	1500	Avg.: Less than 40	--	--	--	
		72	--	--	--	Car E
		79	--	--	--	Pickup E
		80	--	--	--	Truck E
		70	--	--	--	Car W
		78	--	--	--	Pickup W
	1530	82	--	--	--	Bus S

Table II B-64
TRACT C-b NOISE STUDY DATA SHEET

DATE: 2-15-79

TEMPERATURE: 38°F
WIND SPEED: 1 - 2 W (MPH)

METER TYPE: General Radio 1561-E
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING [✓ A]B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1400	Avg.: Less than 40	S	East of Site	90°	
Admin. Bldg.	1405	Avg.: 53	S	South of Site	90°	
uard Shack Entrance Area	1410	Avg.: Less than 40	S	East Side Shoulder	90°	
		60	--	--	--	Car
		65	--	--	--	Pickup S
		85	--	--	--	Truck N
	1500	88	--	--	--	Bus S
		60	--	--	--	Pickup N
		65	--	--	--	Pickup N
		63	--	--	--	Car N
		78	--	--	--	Car S
C-b Entrance at Piceance Road	1530	Avg.: Less than 40	S	South Shoulder	90°	
		88	--	--	--	Bus S
		75	--	--	--	Pickup E
		70	--	--	--	Car E
		73	--	--	--	Van W
		85	--	--	--	Truck W
	1600	69	--	--	--	Car E

Table II B-65

TRACT C-b NOISE STUDY DATA SHEET

DATE: 2-22-79

TEMPERATURE: 6°C
WIND SPEED: - 0 - (MPH)

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A] B, C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1310	Avg.: Less than 40	S	East of Site	90°	
Parking Lot	1315	Avg.: 55	S	South of Site	90°	
Guard Shack West of Road	1320	Avg.: Less than 40	S	West Side	90°	
		78	--	--	--	Cement Trk N
		80	--	--	--	Cement Trk N
	1330	65	--	--	--	Car S
		68	--	--	--	Pickup S
		82	--	--	--	Water Truck S
		72	--	--	--	2-Ton Truck N
		66	--	--	--	Blazer N
		63	--	--	--	Car S
	1440					
		Snowing Heavily				
C-b Entrance Piceance Road	1410	Avg.: Less than 40	--	South Side	90°	
		72	--	--	--	Pickup W
		69	--	--	--	Car W
		69	--	--	--	Car E
	1500	81	--	--	--	Semi Truck W
		Light traffic due to heavy snow and poor road conditions				

Table II B-66

TRACT C-b NOISE STUDY DATA SHEET

DATE: 3-1-79

TEMPERATURE: 30°F
WIND SPEED: 20 S (MPH)

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1300	Avg.: Less than 40	S	East of Site	90°	
Admin. Bldg.	1315	Avg.: 57	S	South of Site	90°	
Guard Shack	1320	Avg.: 42	S	West of Road	90°	
		70	--	--	--	Pickup
		65	--	--	--	Pickup N
		76	--	--	--	Semi Truck S
		78	--	--	--	Dump Truck S
	1330	72	--	--	--	Dump Truck N
		68	--	--	--	Jeep N
		59	--	--	--	Pickup S
		58	--	--	--	Gas Truck N
		58	--	--	--	Car S
	1400	Overcast and windy				
C-b Entrance	1405	72	--	South of Road	--	Van S
		74	--	About 50 ft	--	Dump Truck N
		70	--	--	--	Pickup S
		72	--	--	--	Pickup N
		78	--	--	--	C-b Bus

Table II B-67

TRACT C-b NOISE STUDY DATA SHEET

DATE: 3-9-79

TEMPERATURE: 10°C
WIND SPEED: - 0 - (MPH)

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	0930	Avg.: Less than 40	S	East of Site	90°	
Admin. Bldg.	0935	Avg.: 52	S	South of Site	90°	
Guard Shack West of Road	0940	65	S	West of Entrance Road	90°	Station Wagon N
		70	--	--	--	Pickup S
		63	--	--	--	Car S
	0950	65	--	--	--	Airplane S
		72	--	--	--	Dump Truck S
	1005	75	--	--	--	Dump Truck S
		65	--	--	--	Pickup S
		73	--	--	--	Gas Truck S
		58	--	--	--	Water Truck N
	1035	Avg.: 42	No Activity			
C-b Entrance at Piceance Road	1045	Avg.: Less than 40	--	30 ft South of Highway	90°	
		82	--	--	--	Semi Truck W
		70	--	--	--	Car W
		73	--	--	--	Pickup E
	1100	68	--	--	--	Car W
		83	--	--	--	Dump Truck W
		80	--	--	--	Dump Truck W

Table II B-68

TRACT C-b NOISE STUDY DATA SHEET

DATE: 3-15-79

TEMPERATURE: 11°C
WIND SPEED: 3 - 5 S (MPH)

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1300	Avg.: Less than 40	S	East of Site	90°	
Admin. Bldg.	1305	Avg.: 55	S	South of Shaft	90°	
Guard Shack	1310	Avg.: 42	S	30 ft West of Road	90°	
		68	--		--	Blazer S
	1315	65	--	--	--	Blazer S
		72	--	--	--	Pickup N
		65	--	--	--	Car S
	1320	79	--	--	--	Truck S
		80	--	--	--	Dump Truck S
		63	--	--	--	Car N
	1330	78	--	--	--	Semi Truck N
C-b Entrance at Piceance Road	1345	78	--	30 ft South of Road	90°	Car W
		82	--		--	Truck W
	1400	75	--	--	--	Van E
		69	--	--	--	Car E
		80	--	--	--	Truck E
	1420	74	--	--	--	Pickup W
		65	--	--	--	Car W
		62	--	--	--	Car W
	1430					

Table II B-69

TRACT C-b NOISE STUDY DATA SHEET

DATE: 3-22-79

TEMPERATURE: 0°C
WIND SPEED: -- (MPH)

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1400	Avg.: Less than 40	S	East of Site	90°	
Admin. Bldg.	1405	Avg.: 55	S	South of Site	90°	
Guard Shack	1410	68	S	West of Road	90°	Dlvry Van S
		72	--	--	--	Semi Truck S
		60	--	--	--	Pickup N
		65	--	--	--	Pickup N
	1450	65	--	--	--	Tank Truck N
		68	--	--	--	Car S
		65	--	--	--	Pickup S
		65	--	--	--	Car N
		67	--	--	--	Car N
		60	--	--	--	Pickup S
	1510	60	--	--	--	Car S
			--	--	--	Car S
		Less than 40	Avg - with no traffic			
C-b Entrance Piceance Road	1515	62	S	South Side of Highway	--	Pickup W
	1520	72	--		--	Bus S
		70	--	--	--	Bus S
		68	--	--	--	Road Grader S
		Less than 40	Avg with no traffic			

Table II B-70

TRACT C-b NOISE STUDY DATA SHEET

DATE: 3-30-79

TEMPERATURE: 6^oC
WIND SPEED: 10 - 15 SW (MPH)

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A], B, C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1430	Avg.: Less than 40	S	East of Site	90^o	
Admin. Bldg.	1435	Avg.: 53	S	South of Site	90^o	
Guard Shack	1440	Avg.: Less than 40	S	West of Road	90^o	
		80	--	--	--	Truck S
		65	--	--	--	Pickup S
		68	--	--	--	Pickup S
		75	--	--	--	Truck N
		60	--	--	--	Car S
		69	--	--	--	Pickup S
		76	--	--	--	Pickup S
		63	--	--	--	Car N
	1530	81	--	--	--	Water Truck S
C-b Entrance Piceance Ck. Road	1535	Avg.: Less than 40	S	South of Highway	90^o	
		70	--		--	Car E
		73	--	--	--	Pickup E
		65	--	--	--	Pickup W
	1600	70	--	--	--	Pickup W
		Light Traffic				

Table II B-71

TRACT C-b NOISE STUDY DATA SHEET

DATE: 4-5-79

TEMPERATURE: 5°C
WIND SPEED: 10 - 11 SW (MPH)

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1020	Avg.: Less than 48	S	East of Site	90°	
Admin. Bldg.	1025	Avg.: 54	S	Parking Lot South of Site	90°	
Guard Shack	1030	Avg.: 40	S	West of Road	90°	
		66	--	--	--	Semi Truck S
		60	--	--	--	Pickup S
		68	--	--	--	Tank Truck S
		60	--	--	--	Car S
	1045	58	--	--	--	Blazer S
		56	--	--	--	Car N
		70	--	--	--	Water Truck S
		65	--	--	--	Pickup S
		60	--	--	--	Car N
C-b Entrance Piceance Road	1100	Avg.: 40	S	South of Road	--	
		70	--	--	--	Pickup W
		73	--	--	--	Pickup W
		70	--	--	--	Pickup E
		72	--	--	--	Scout E
		82	--	--	--	Truck W

Table II B-72

TRACT C-b NOISE STUDY DATA SHEET

DATE: 4-12-79

TEMPERATURE: 5°C
WIND SPEED: - 0 - (MPH)

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1300	Avg.: Less than 40	S	East of Site	90°	
Admin. Bldg.	1305	Avg.: 55	S	South	90°	
Guard Shack	1545	Avg.: Less than 40	S	West of Road	90°	
		80	--	--	--	Cement Trk S
		60	--	--	--	Pickup N
		74	--	--	--	VW N
		78	--	--	--	Car N
C-b Entrance Piceance Ck. Rd.		Avg.: Less than 40	--	20 ft North of Road	90°	
	1510	58	--		--	Jeep Wagon
	1515	72	--	--	--	2-Ton Truck W
		68	--	--	--	School Bus W
		80	--	--	--	C-b Bus S
	1540	78	--	--	--	Pickup E
		68	--	--	-- (Stopping)	Tanker S
		65	--	--	--	Car S

Table II B-73

TRACT C-b NOISE STUDY DATA SHEET

DATE: 4-19-79

TEMPERATURE: 10°C
WIND SPEED: 15 - 25 S (MPH)

Gusting Winds

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1330	Avg.: Less than 40	S	East of Site	90°	
Admin. Bldg.	1335	Avg.: 49	S	South of Site	90°	
Guard Shack	1340	Avg.: 41	S	North of Site West of Road	90°	
West of Entrance 30'	1410	78	S	North of Site West of Road	90°	Water Truck S
	1415	65	--		--	Pickup S
	1416	72	--	--	--	Semi Truck N
	1420	65	--	--	--	Car S
	1430	68	--	--	--	Pickup S
	1438	69	--	--	--	Pickup N
Piceance Creek C-b Entrance	1510	Avg.: Less than 40	S	20 ft South of Road	90°	
	1520	70	S	--	90°	Pickup E
		68	--	--	--	Car E
		72	--	--	--	Van W
		81	--	--	--	Semi Truck E
		61	--	--	--	Pickup W
		68	--	--	--	Pickup W

Table II B-74

TRACT C-b NOISE STUDY DATA SHEET

DATE: 4/26/79

TEMPERATURE: 15°C
WIND SPEED: -0- (MPH)

METER TYPE: General Radio 1561-B
METER ID#: 28612
MICROPHONE SERIAL NO: 44682

SITE	TIME (MST)	WEIGHTING ([✓ A],B,C) + READING (dB)	METER RESPONSE [✓ S] = SLOW F = FAST	COMMENTS		VEHICLE INFORMATION
				POSITION OF OBSERVER	POSITION OF MICROPHONE WITH RESPECT TO NOISE	
042	1300	Avg: Less than 40	S	East of mine site	90°	----
Admin.	1305	Avg: 52	S	South of site	90°	----
uard Shack	1310	Avg: Less than 40	S	30' West of Hiway	90°	----
	1320	65	--	--	90°	Chevy P/U S
		80	--	--		Water Truck S
		68	--	--		Scott Disp. N
		74	--	--		Water Truck S
	1330	68	--	--		2-Ton Truck S
		64	--	--		Blazer S
	VERY LIGHT TRAFFIC THIS PM					
Piceance Creek	1400	Avg: Less than 40	S	30' South of Hiway	90°	
		72	--	--	--	Pickup W
		83	--	--	--	Semi Truck W
		68	--	--	--	Car E
		70	--	--	--	Pickup E
	1420	65	--	--	--	Station Wgn E

Table II B-75

NOISE DATA
SITE NB15
24 HOUR, FIXED SITE MONITORING
METER TYPE B & K TYPE 2203
METER ID#672110
RECORDER TYPE B & K TYPE 2306
RECORDER ID#694343

1. START TIME (MST) 2. STOP TIME (MST) 3. CHART RANGE 4. WIND SPEED 5. WIND DIRECTION	PEAK db 1900 to 0700	PEAK db 0700 to 1900	AVERAGE db 1900 to 0700	AVERAGE db 0700 to 1900	BACKGROUND TAKEN FROM 1900-0700
1. 1200 10/5/78 2. 1200 10/6/78 3. 40-90 db 4. 1-2 mph 5. N	60	74	LESS THAN 40	49	LESS THAN 40
1. 1300 10/12/78 2. 1300 10/13/78 3. 40-90 db 4. 0 mph 5.	53	74	LESS THAN 40	42	LESS THAN 40
1. 1300 10/18/78 2. 1300 10/19/78 3. 40-90 db 4. 0 mph 5.	54	75	LESS THAN 40	51	LESS THAN 40
1. 1200 10/23/78 2. 1215 10/24/78 3. 40-90 db 4. 0 mph 5.	51	74	LESS THAN 40	56	LESS THAN 40
1. 1320 10/30/78 2. 1310 10/31/78 3. 40-90 db 4. 1-2 mph 5. E	54	74	LESS THAN 40	55	LESS THAN 40

Table II B-76

NOISE DATA
SITE NB15
24 HOUR, FIXED SITE MONITORING
METER TYPE B & K TYPE 2203
METER ID#672110
RECORDER TYPE B & K TYPE 2306
RECORDER ID#694343

1. START TIME (MST) 2. STOP TIME (MST) 3. CHART RANGE 4. WIND SPEED 5. WIND DIRECTION	PEAK db 1900 to 0700	PEAK db 0700 to 1900	AVERAGE db 1900 to 0700	AVERAGE db 0700 to 1900	BACKGROUND TAKEN FROM 1900-0700
1. 1130 11/2/78 2. 1200 11/3/78 3. 40-90 db 4. 1-5 mph 5. SE	62	72	LESS THAN 40	50	LESS THAN 40
11/9/78 Recorder failure					
1. 1330 11/14/78 2. 1215 11/15/78 3. 40-90 db 4. 0 mph 5.	LESS THAN 40	72	LESS THAN 40	54	LESS THAN 40
1. 1325 11/21/78 2. 1300 11/22/78 3. 40-90 db 4. 5-8 mph 5. S	53	71	LESS THAN 40	51	LESS THAN 40
11/28/78 Noise meter Power failure.					

Table II B-77

NOISE DATA
SITE NB15
24 HOUR, FIXED SITE MONITORING
METER TYPE B & K TYPE 2203
METER ID#672110
RECORDER TYPE B & K TYPE 2306
RECORDER ID#694343

1. START TIME (MST) 2. STOP TIME (MST) 3. CHART RANGE 4. WIND SPEED 5. WIND DIRECTION	PEAK db 1900 to 0700	PEAK db 0700 to 1900	AVERAGE db 1900 to 0700	AVERAGE db 0700 to 1900	BACKGROUND TAKEN FROM 1900-0700
1. 1300 12/7/78 2. 1245 12/8/78 3. 40-90 db 4. 0-4 mph 5. S	52	70	LESS THAN 40	50	LESS THAN 40
1. 1340 12/12/78 2. 1330 12/13/78 3. 40-90 db 4. 5-8 mph 5. S	50	71	41	49	LESS THAN 40
Down for maintenance on recorder					
1. 1250 12/27/78 2. 1300 12/28/78 3. 40-90 db 4. 5 mph 5. SW	70	72	46	53	43

Table II B-78

NOISE DATA
SITE NB15
24 HOUR, FIXED SITE MONITORING
METER TYPE B & K TYPE 2203
METER ID#672110
RECORDER TYPE B & K TYPE 2306
RECORDER ID#694343

1. START TIME (MST) 2. STOP TIME (MST) 3. CHART RANGE 4. WIND SPEED 5. WIND DIRECTION	PEAK db 1900 to 0700	PEAK db 0700 to 1900	AVERAGE db 1900 to 0700	AVERAGE db 0700 to 1900	BACKGROUND TAKEN FROM 1900-0700
1. 1345 1/3/79 2. 1300 1/4/79 3. 40-90 db 4. 0-3 mph 5. S	LESS THAN 40	72	LESS THAN 40	48	LESS THAN 40
1. 1330 1/20/79 2. 1415 1/11/79 3. 40-90 db 4. 0 mph 5.	58	66	LESS THAN 40	46	LESS THAN 40
1. 1400 1/16/79 2. 1430 1/17/79 3. 40-90 db 4. 10-15 mph 5. S	46	72	LESS THAN 40	56	LESS THAN 40
1. 1400 1/22/79 2. 1330 1/23/79 3. 40-90 db 4. 5 mph 5. N	Recorder failure	68	Recorder failure	45	Recorder failure

ATMOSPHERIC
DIFFUSION STUDIES

II B-6 ATMOSPHERIC DIFFUSION STUDIES

No additional studies were completed during this report period.

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PARTICULATE
ANALYSIS

II B-7 PARTICULATE ANALYSIS

The data presented in this section represent the distribution of particle sizes for suspended particulates measured with an Anderson particle sizing head on a standard High Volume sampler. In general, the total particulate catch was too small for accurate size fraction measurement; however, all the data are presented here.

Table/Figure No.	Description	Page No.
Table II B-79	Size distribution of airborne particulate matter in the respirable ranges.	II B-172

Table II B-79

SIZE DISTRIBUTION OF AIRBORNE PARTICULATE MATTER IN THE RESPIRABLE RANGES

Concentrations in μg/m^3

Size Range in Microns* / Date of Sample	7.0-Above	3.3-7.0	2.0-3.3	1.1-2.0	0.01-1.1
April 6-7, 1978	0	5.50	0	0.94	4.40
April 24-25, 1978	5.81	0	0	1.26	1.47
April 30- May 1, 1978	7.70	0	1.89	5.81	13.20
May 6-7, 1978	0	0	0	1.10	3.93
May 12-13, 1978	0	0	0	1.89	35.66
May 18-19, 1978	12.57	9.27	8.48	12.41	15.71
May 24-25, 1978	0	0.47	0	0	0
Mean	3.73	2.18	1.48	3.34	12.05
April 18-19, 1979	15.25	21.65	13.53	3.20	14.27
April 24-25, 1979	12.05	15.87	14.27	3.81	22.76
April 30- May 1, 1979	2.71	7.87	8.36	0.12	7.13
May 6-7, 1979	8.86	7.13	5.17	0.98	23.74
May 12-13, 1979	4.92	4.67	1.60	0.86	10.33
May 18-19, 1979	10.58	11.07	0	11.19	9.59
May 24-25, 1979	14.02	12.79	10.09	4.31	13.78
May 30-31, 1979	5.54	5.29	5.29	0	10.46
June 5-6, 1979	12.79	7.13	3.81	4.06	17.47
June 11-12, 1979	4.31	4.55	7.87	0	14.27
Mean	9.10	9.80	7.00	2.85	14.38

* Aerodynamic diameter of the particulate matter.

TRACE METALS

II B-8 TRACE METALS

No additional studies were completed during this time period.

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INVERSION STUDIES

II B-9 INVERSION STUDIES

Refer to the references at the end of section II B for studies completed during this time period.

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TETHERSONDE
SOUNDINGS

II B-10 TETHERSONDE SOUNDINGS

Pilot balloon studies were conducted from November 1977 through November 1978. Refer to the references at the end of section II B for studies completed during this time period.

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AIR QUALITY
ASSURANCE